

Helsinki Institute for Information Technology HIIT

Facts and Figures 2012

Appendix to the Annual Report

Ella Bingham (ed.)

www.hiit.fi



Contact Information

Helsinki Institute for Information Technology HIIT
Tietotekniikan tutkimuslaitos HIIT (in Finnish)
Forskningsinstitutet för Informationsteknologi HIIT (in Swedish)

hiit-info@hiit.fi
www.hiit.fi

Otaniemi Site

Postal address at Open Innovation House (OIH):
Helsinki Institute for Information Technology HIIT
PO Box 15600, FI-00076 Aalto, Finland

Street address:
Open Innovation House OIH, Otaniementie 19-21, Espoo
Telephone: +358 9 47001

Postal address at Computer Science Building:
Helsinki Institute for Information Technology HIIT
PO Box 15400, FI-00076 Aalto, Finland

Street address:
Computer Science Building, Konemiehentie 2, Espoo
Telephone: +358 9 47001

Kumpula Site

Postal address:
Helsinki Institute for Information Technology HIIT
PO Box 68, FI-00014 University of Helsinki, Finland

Street address:
University of Helsinki, Department of Computer Science, Exactum
Gustaf Hällströmin katu 2b, Helsinki
Telephone: +358 9 1911
Fax: +358 9 191 51120

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A. Teaching and research visits

A.1. Courses given by HIIT researchers at participating departments

Spring 2012 courses

- Machine Learning: Advanced Probabilistic Methods (J. Hollmén) Aalto
- Combinatorics (P. Kaski, E. Czeizler) Aalto
- Postgraduate Course in Theoretical Computer Science (P. Kaski, T. Janhunen) Aalto
- Individual Studies (P. Orponen, P. Kaski, K. Heljanko, T. Janhunen) Aalto
- Research Course in Theoretical Computer Science (P. Orponen, P. Kaski, K. Heljanko, T. Janhunen) Aalto
- Reactive Systems (K. Heljanko) Aalto
- Information Security and Usability (K. Karvonen) Aalto
- Internet Technologies for Mobile Computing (S. Tarkoma) Aalto
- Introduction to Datacommunications and Multimedia Technology (A. Ylä-Jääski) Aalto
- Introduction to Datacommunications (A. Ylä-Jääski) Aalto
- Seminar on Internetworking (A. Ylä-Jääski) Aalto
- Internet and Computing Forum (A. Ylä-Jääski) Aalto
- Special Assignment in Data Communications Software (A. Ylä-Jääski) Aalto
- Individual Studies in Data Communications Software (A. Ylä-Jääski) Aalto
- Special Course in Data Communication Software (A. Ylä-Jääski) Aalto
- Research Seminar on Data Communications Software (A. Ylä-Jääski) Aalto
- Student Project in Theoretical Computer Science (T. Junttila) Aalto
- Combinatorial Models and Stochastic Algorithms (P. Orponen, L. Ahlroth) Aalto
- Discrete Models and Search (A. Schumacher, G. Liu) Aalto
- Logiikka tietotekniikassa: perusteet (T. Janhunen, A. Hyvärinen, Tero Laitinen, S. Wieringa, J. Kauttio) Aalto
- High-Throughput Bioinformatics (E. Georgii, S. Khan) Aalto
- Kandidaatintyö ja seminaari (T. Janhunen) Aalto
- Scientific Writing (A. Honkela, S. Varjonen, J. Toivanen) UH
- Data Structures (P. Floréen) UH
- Software Engineering Lab (S. Linkola) UH
- Linux administration (M. Pervilä) UH
- Human-Computer Interaction (G. Jacucci, E. Hoggan, M. Nelimarkka) UH
- Version control (S. Kaipainen) UH
- Robot programming project (J. Pyykkö) UH
- Data Compression Techniques (N. Välimäki) UH
- Data Mining (H. Toivonen, E. Galbrun) UH
- Data Mining Project (H. Toivonen, E. Galbrun) UH
- Deterministic Distributed Algorithms (J. Suomela, J. Hirvonen) UH
- Discrete Optimization Project (M. Jarvisalo) UH
- Location-Awareness (P. Nurmi, S. Bhattacharya, T. Pulkkinen) UH
- Probabilistic Models (P. Parviainen, T. Niinimäki) UH
- Project in Data Compression Techniques (V. Mäkinen) UH
- Project in Probabilistic Models (A. Honkela) UH
- Project in String Processing Algorithms (V. Mäkinen) UH
- Projects in Unsupervised Machine Learning (J-P. Kauppi, M. Gutmann) UH
- Unsupervised Machine Learning (A. Hyvärinen, J. Puuronen) UH

- Distributed Systems Project (J. Kangasharju, L. Wang) UH
- Interface Technologies (G. Jacucci) UH
- Mobile Middleware (S. Tarkoma) UH
- Computational Methods for Systems Biology (L. Salmela, M. Heinonen, H. Su) UH
- Seminar: Neuroinformatics (A. Hyvärinen) UH
- Seminar on Intelligent Systems (P. Parviainen) UH
- Seminar: Advanced Topics in Interactive Systems (E. Hoggan) UH
- Seminar: Content Distribution (J. Kangasharju) UH
- Seminar: Content-centric Distributed Systems (S. Tarkoma, W. Rao) UH
- MSc Thesis Seminar on Bioinformatics (V. Mäkinen) UH
- Seminar: Bioinformatics of Gene Regulation (E. Ukkonen) UH
- PhD Student Seminar (J. Kangasharju, P. Moen) UH
- Tieto- ja viestintäteknologian ja sosiaalisen vuorovaikutuksen tutkimuksen metodologiaa (N. Ravaja) UH

Summer 2012 courses:

- Introduction to Programming (A. Laaksonen) UH
- Advanced course in programming (A. Laaksonen) UH
- Database Application (T. Kovanen) UH

Fall 2012 courses:

- Student Project in Theoretical Computer Science (P. Kaski, K. Heljanko, T. Janhunen, P. Orponen) Aalto
- Postgraduate Course in Theoretical Computer Science (P. Orponen, T. Janhunen, K. Heljanko, P. Kaski) Aalto
- Individual Studies (P. Orponen, T. Janhunen, K. Heljanko, P. Kaski) Aalto
- Research Course in Theoretical Computer Science (P. Orponen, T. Janhunen, K. Heljanko, P. Kaski) Aalto
- Algorithmic Methods of Data Mining (J. Rousu, J. Lijffijt) Aalto
- Computational Genomics (J. Rousu) Aalto
- Special Course in Computer and Information Science IV (J. Rousu, S. Kaski, J. Peltonen, S. Seth) Aalto

- Special Course in Computer and Information Science V (J. Rousu, S. Kaski, R. Dutta, S. Virtanen) Aalto
- Special Course in Bioinformatics (J. Rousu, J. Kludas) Aalto
- Individual Studies (J. Rousu, S. Kaski) Aalto
- Special Course in Computer and Information Science with Varying Content (S. Kaski, J. Rousu) Aalto
- Parallel and Distributed Systems (K. Heljanko, J. Dubrovin, S. Wieringa) Aalto
- Scalable Cloud Computing (K. Heljanko, A. Schumacher) Aalto
- Tietoliikenneohjelmistojen erikoiskurssi (A. Ylä-Jääski) Aalto
- Research Seminar on Data Communications Software (A. Ylä-Jääski) Aalto
- Datasta tietoon (K. Nybo, J. Toivola, J. Hollmén, E. Oja) Aalto
- Modeling Biological Networks (S. Khan) Aalto
- Tietojenkäsittelyteorian perusteet T (T. Junttila, T. Janhunen, R. Kindermann) Aalto
- Tietojenkäsittelyteorian perusteet Y (T. Junttila, T. Janhunen) Aalto
- Principles of Algorithmic Techniques (P. Orponen, L. Ahlroth, S. Seki) Aalto
- Computational Complexity Theory (T. Junttila, T. Janhunen) Aalto
- Advanced Course in Computational Logic (T. Janhunen, R. Kindermann) Aalto
- Answer Set Programming (T. Janhunen, G. Liu) Aalto
- Sosiaalinen media (R. Sarvas) Aalto
- Kandidaatintyö ja seminaari (T. Janhunen) Aalto
- Introduction to the use of computers (S. Kaipainen) UH
- ICT driving license (S. Kaipainen) UH
- Cognitive modelling II (J. Toivanen) UH
- Methods for software engineering (T. Kovanen) UH
- Introduction to Artificial Intelligence (T. Roos) UH
- Scientific Writing (E. Lagerspetz) UH
- Data Structures and Algorithms (P. Floréen, A. Laaksonen) UH

- Laboratory of Computational Creativity (A. Valitutti) UH
- Linux Fundamentals (S. Kaipainen) UH
- Programming challenges I (A. Laaksonen) UH
- Programming challenges II (A. Laaksonen, M. Sysikaski) UH
- Version control (S. Kaipainen) UH
- Algorithms for Bioinformatics (L. Salmela, N. Välimäki) UH
- Project: AI Odyssey 2012 (T. Roos, M. Sysikaski) UH
- Design and Analysis of Algorithms (M. Koivisto, T. Niinimäki) UH
- Introduction to Machine Learning (P. Hoyer, D. Entner) UH
- Information-Theoretic Modelling (H. Wettig) UH
- Project in Information-Theoretic Modelling (H. Wettig) UH
- String Processing Algorithms (D. Kempa) UH
- Distributed Systems (O. Karkulahti) UH
- Interface Technologies (A. Jylhä, M. Nelimarkka) UH
- Project in Biodatabases (L. Salmela) UH
- Seminar: Distributed Algorithms (J. Suomela) UH
- MSc Thesis Seminar on Algorithms and Machine Learning (H. Toivonen) UH
- MSc Thesis Seminar on Bioinformatics (L. Salmela) UH
- Seminar: Internet of Things (W. Rao) UH
- PhD Student Seminar (S. Tarkoma, P. Moen) UH
- Tieto- ja viestintäteknologian sosiaalipsykologiaa (N. Ravaja) UH

A.2. Research visits

Research visits of 1 week or longer are listed here.

Visits to HIIT:

- Cheshire, Coye, PhD
University of California Berkeley, USA, 3 weeks
- Doty, David, PhD
California Institute of Technology, USA, 2 weeks
- Eggeling, Ralf
Martin-Luther-Universität, Germany, 5 months
- Helal, Sumi, PhD.
University of Florida, USA, 3 months
- Hota, Chittaranjan, PhD
BITS, Pilani Hyderabad Campus, India, 2 months
- Keller, Barbara
ETH Zürich, Switzerland, 1 week
- Koski, Timo, Professor
Kungliga Tekniska Högskolan (KTH), Sweden, 2 months
- Kostitsyna, Irina
Stony Brook University, USA, 2 weeks
- Krasnoshchekov, Dmitry
Institute for Geospheres Dynamics, Russia, 6 weeks
- Kuzmin, Evgeniy, Doctoral Student
Petrozavodsk State University, Russia, 1 week
- Lenzen, Christoph
Weizmann Institute of Science, Israel, 1 week
- Lyon, Joachim, MA
Stanford University, USA, 1 week
- Löchtefeld, Markus
Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI), Germany, 1 week
- Malone, Brandon
Mississippi State University, USA, 1 week
- Mazalov, Vladimir, PhD
Petrozavodsk State University, Russia, 2 weeks
- Medlar, Alan
University College London, UK, 7 months
- Nederlof, Jesper, PhD
Utrecht University, the Netherlands, 2 weeks
- Packer, Eli
IBM Haifa, Israel, 2 weeks
- Ray, Saurabh
Max-Planck-Institut für Informatik, Germany, 2 weeks
- Rogers, Simon, PhD
University of Glasgow, UK, 1 month
- Sanz García, Andrés, M.Sc.(Tech.)
University of La Rioja, Spain, 3 months
- Sasaki, Hiroaki, PhD
University of Electro-Communications, Japan, 8 months
- Siebes, Arno, Professor
Universiteit Utrecht, Netherlands, 1 week
- Sorkin, Gregory
London School of Economics and Political Science, UK, 1 week
- Uitto, Jara
ETH Zürich, Switzerland, 1 week
- van Leeuwen, Matthijs, PhD
KU Leuven, Belgium, 2 weeks
- van Zimmeren, Esther, Dr
KU Leuven, Belgium, 3 weeks
- Watanabe, Kazuho
Nara Institute of Science and Technology, Japan, 1 month
- Zhang, Kun
Max Planck Insititute for Biological Cybernetics , Germany, 2 weeks
- Xiao, Yu, PhD
Carnige Mellon University, USA, 7 months
- Yan, Yan, PhD
Graduate University of the Chinese Academy of Sciences, China, 2 months

Visits from HIIT:

- Bhattacharya, Sourav
Newcastle University, UK, 4.5 months
Aarhus University, Denmark, 1 month
- Corander, Jukka
Center for Communicable Disease Dynamics, Harvard School of Public Health, USA, 2 months
- Ding, Aaron Yi
Deutsche Telekom (German Telecom) Labs, Germany, 2 months

- Enarvi, Seppo
UC Berkeley, USA, 7 months
- Floréen, Patrik
Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI), Germany, 2 months
- Galbrun, Esther
Katholieke Universiteit Leuven, Belgium, 7 weeks
MPPI Saarbruecken, Germany, 1 week
- Huotari, Kai
UC Berkeley, USA, 6 months
- Kangasharju, Jussi, Visiting professor
Seoul National University, South Korea, 4 months
- Kaski, Samuel
University of Glasgow, UK, 2 weeks
- Korhonen, Janne
University of Bergen, Norway, 2 months
- Kuikkaniemi, Kai
University of Florida, USA, 1 month
- Kurimo Mikko
UC Berkeley, USA, 3 months
- Lagerspetz Eemil
UC Berkeley, USA, 4 months
- Lagutin, Dmitrij
Tsinghua University, China, 3 months
- Lampinen, Airi
PhD Internship, Microsoft Research New England, USA, 3 months
- Lehmuskallio, Asko
UC Berkeley, USA, 5 months
- Lijffijt, Jeffrey
Leiden University, Netherlands, 1 month
- Lukyanenko, Andrey
Institute of Applied Mathematical Research, Karelian Research Center of Russian Academy of Science, Russia, 1 month
INRIA, Sophia-Antipolis, France, 1 month
- Palomäki, Kalle
UC Berkeley, USA, 2 months
- Peltonen, Jaakko
Universite Catholique de Louvain, Belgium, 1 month
- Pitkänen, Olli
UC Berkeley, USA, 1 month
- Pulkkinen, Teemu
Deutsches Forschungszentrum für Künstliche Intelligenz (DFKI), Germany, 3 weeks
- Roos, Teemu
Corpus Christi College, University of Cambridge, UK, 3.5 months
- Roto, Suvi Elina
Wellcome Trust Sanger Institute, UK, 3 months
- Salmela, Leena
Université Montpellier II, France, 2 weeks
- Seki, Shinnosuke
California Institute of Technology, USA, 2 weeks
University of Western Ontario, Canada, 1 week
University of South Florida, USA, 2 weeks
- Siekkinen, Matti
Eurecom, Sophia-Antipolis, France, 2 weeks
- Smura, Timo
UC Berkeley, USA, 3 months
- Suvitaival, Tommi
University of Glasgow, UK, 3 months
- Virtanen, Seppo
UC Berkeley, USA, 3 months
- Xiao, Yu
Carnegie Mellon University, USA, 7 months
- Xiong, Jie
Oxford Summer School in Computational Biology 2012, UK, 6 weeks

B. Funding

We first list the funding sources and the distribution of expenses of each site separately. One should note that comparison between different years or between universities is not always straightforward due to different procedures of accounting.

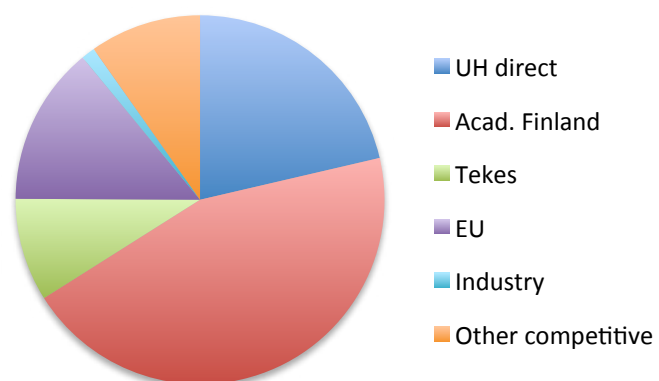
Kumpula's funding figures are shown in Table 1. Direct funding from University of Helsinki (UH) has traditionally been ca 1 MEur, of which a portion has directly been transferred to Aalto University to account for common administrative duties, making UH's direct funding to Kumpula 0.81 MEur. External funding has increased significantly, most notably by new EU projects. The decrease in "Other operational expenses" and the increase in "Service charge" are partly due to different accounting procedures in 2011 vs 2012.

Kumpula	2009	2010	2011	2012	%
Total funding	2,272,824	3,110,733	2,649,318	3,792,231	
UH direct funding	810,000	810,000	810,000	810,000	21 %
Academy of Finland	306,880	1,156,164	1,301,907	1,694,815	45 %
National Technology Agency Tekes	373,969	519,348	304,225	342,377	9 %
European Union	207,177	59,832	65,272	528,457	14 %
Industry	56,800	0	0	45,770	1 %
Other (Foundations, competitive univ. f.)	517,998	565,390	167,914	370,812	10 %

Total expenses	2,450,851	2,915,601	2,410,656	3,720,441	
Salaries	1,981,005	2,091,923	1,515,436	2,535,348	68 %
Other operational expenses	261,320	542,065	608,760	448,765	12 %
Service charge to UH (rents included)	208,526	281,614	286,460	736,328	20 %

Table 1: Kumpula funding 2009-2012.

Figure 1: Kumpula funding 2012.



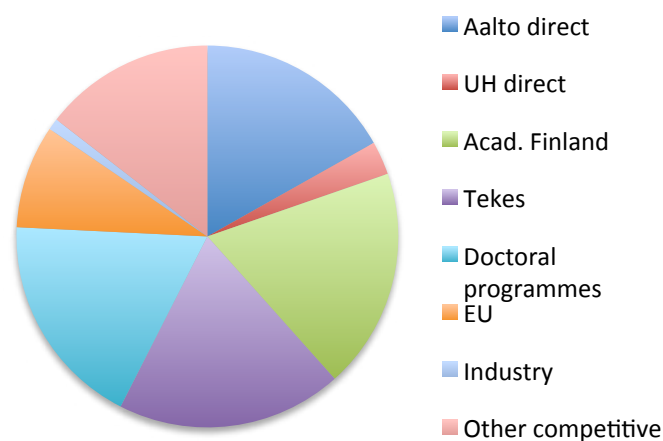
Otaniemi OIH's funding figures are shown in Table 2. We list separately the funding of two doctoral programmes of the Academy of Finland which HIIT coordinates: they do not fully contribute to HIIT's person-years or publications as most doctoral students are employed by other universities, but they constitute a largish part of HIIT's budget. Similarly in the list of Expenses, the large amount of "Other operational expenses" mainly consists of the expenses of these doctoral programmes. The "Service charge to Aalto" has increased significantly due to Aalto's new policy of internal charges.

OIH	2009	2010	2011	2012	%
Total funding	5,591,965	6,394,357	6,180,389	5,936,410	
Aalto direct funding	1,000,000	1,000,000	1,000,000	1,000,000	17 %
UH direct funding	168,200	168,200	168,200	168,200	3 %
Academy of Finland	343,300	612,452	796,505	1,110,568	19 %
National Technology Agency Tekes	2,194,968	1,923,352	1,266,363	1,135,342	19 %
Acad.Finland doctoral programmes		1,007,319	1,001,904	1,084,060	18 %
European Union	910,838	848,983	786,099	519,359	9 %
Industry	183,766	190,464	40,173	57,566	1 %
Ministries and other public funding	94,820	0	9,500	0	0 %
Other (Foundations, competitive univ. f.)	419,281	643,587	1,111,644	861,314	15 %

Total expenses	5,333,995	5,981,211	5,869,826	6,043,206	
Salaries	3,616,745	3,434,744	2,756,648	2,999,485	50 %
Other operational expenses	957,482	1,793,403	2,415,402	2,234,302	37 %
Rents	426,773	474,044	430,582	396,274	7 %
Service charge to Aalto	332,995	279,021	267,194	413,144	7 %

Table 2: OIH funding 2009-2012.

Figure 2: OIH funding 2012.



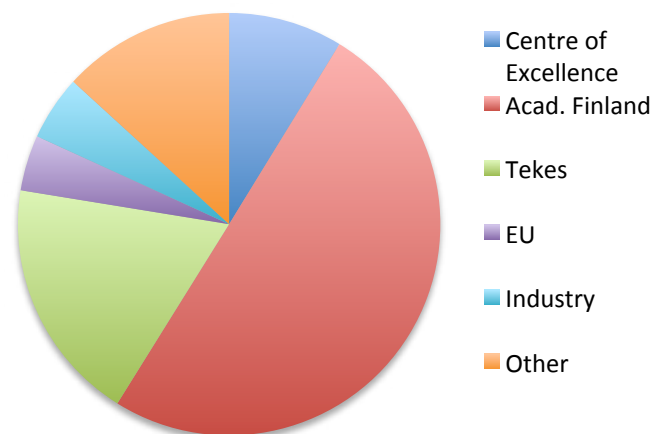
Otaniemi T building's funding figures are shown in Table 3. T building corresponds to HIIT activities at Aalto University's ICS and CSE departments.

Otaniemi T building	2009	2010	2011	2012	%
Total funding	1,059,800	2,535,715	1,589,901	1,713,521	
Centre of Excellence funding from Aalto	133,400	182,775	204,554	150,000	9 %
Academy of Finland	265,800	657,470	849,966	858,812	50 %
National Technology Agency Tekes	381,400	957,160	279,865	320,361	19 %
European Union	98,000	115,198	97,118	72,999	4 %
Industry		176,397	112,303	85,033	5 %
Other (Foundations, competitive univ. f.)	181,200	446,716	46,095	226,316	13 %

Total expenses	899,300	2,236,649	1,472,035	1,495,558	
Salaries	685,100	1,712,996	1,094,232	1,124,388	75 %
Other operational expenses	94,700	175,607	123,716	133,685	9 %
Service charge to Aalto (rents included)	119,500	348,046	254,087	237,485	16 %

Table 3: Otaniemi T building funding 2009-2012.

Figure 3: Otaniemi T building funding 2012.



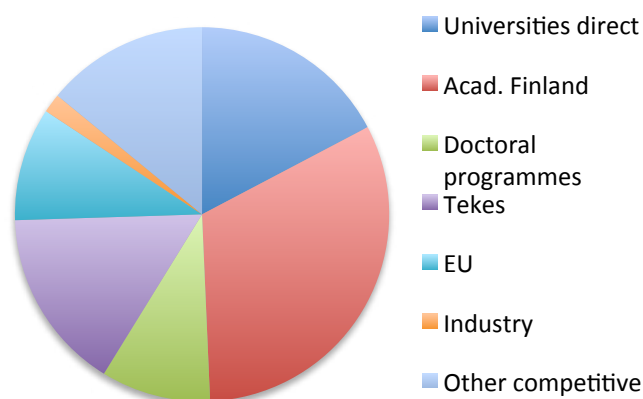
Finally we list the funding sources and the distribution of expenses for the whole HIIT in Table 4. The total funding has increased from 2011, which is mostly attributed to an increase in the funding from the Academy of Finland and European Union.

HIIT	2009	2010	2011	2012	%
Total funding	8,924,589	12,040,805	10,419,608	11,442,161	
Universities' direct funding	1,978,200	1,978,200	1,978,200	1,978,200	17 %
Academy of Finland	915,980	2,426,086	2,948,378	3,664,196	32 %
Doctoral programmes		1,007,319	1,001,904	1,084,060	9 %
National Technology Agency Tekes	2,950,337	3,399,860	1,850,453	1,798,080	16 %
European Union (EU)	1,216,015	1,024,012	948,489	1,120,815	10 %
Industry	240,566	366,861	152,476	188,369	2 %
Ministries and other public funding	94,820	0	9,500	0	0 %
Other (Foundations, competitive univ. f.)	1,251,879	1,838,468	1,530,208	1,608,442	14 %

Total expenses	8,684,146	11,133,463	9,752,517	11,259,205	
Salaries	6,282,850	7,239,663	5,366,316	6,659,222	59 %
Other operational expenses	1,313,502	2,511,075	3,147,878	2,816,752	25 %
Service charge to UH/Aalto	635,299	788,648	765,307	1,386,958	12 %
Rents	452,495	594,077	473,016	396,274	4 %

Table 4: HIIT funding 2009-2012.

Figure 4: HIIT funding 2012.



C. Personnel

In 2012 HIIT staff completed 144 person-years on HIIT funding. In addition, many persons affiliated with HIIT are funded by participating departments or personal grants either from the Academy of Finland or Foundations. The diversity of affiliations is characteristic of HIIT personnel: the most common is an affiliation with one or both of the parent universities, but there are also some who share their time between HIIT and some other organisation. Thus the total number of personnel (over 300) is much higher than the number of person-years completed by HIIT funding.

The distribution of person-years per sites is shown in Table 5. The Otaniemi T building site comprises HIIT researchers both at Aalto University's ICS department and CSE department.

Staff (person-years)	2007	2008	2009	2010	2011	2012
Kumpula	57	57	60	55	40	58
OIH	60	82	83	72	66	50
Otaniemi T building	12	26	42	48	29	36
total	129	165	185	175	135	144

Table 5: Number of person-years paid by HIIT 2007-2012

Another way to visualize the personnel is to look at the distribution of personnel groups per person years, again only listing the person years completed by HIIT funding. Research personnel having a Doctoral degree are listed as "seniors or postdocs"; research personnel having a Master's degree but not a Doctoral degree are listed as "researchers"; and those studying for their Master's degree are listed as "research assistants".

Staff (person-years)	Kumpula	OIH	Otaniemi T building	total
seniors, postdocs	18	16	9	43
doctoral students	16	17	21	54
project researchers	0	4	0	4
research assistants	22	6	6	34
administration	2	7	0	9
total	58	50	36	144

Table 6: Distribution of person-years by personnel groups 2012.

The number of non-Finnish staff members is large, 37 per cent. Almost all non-Finns come from Europe, China, India and India's neighbouring countries. Figure 5 contains all personnel, also including those not counted into HIIT's person-years.

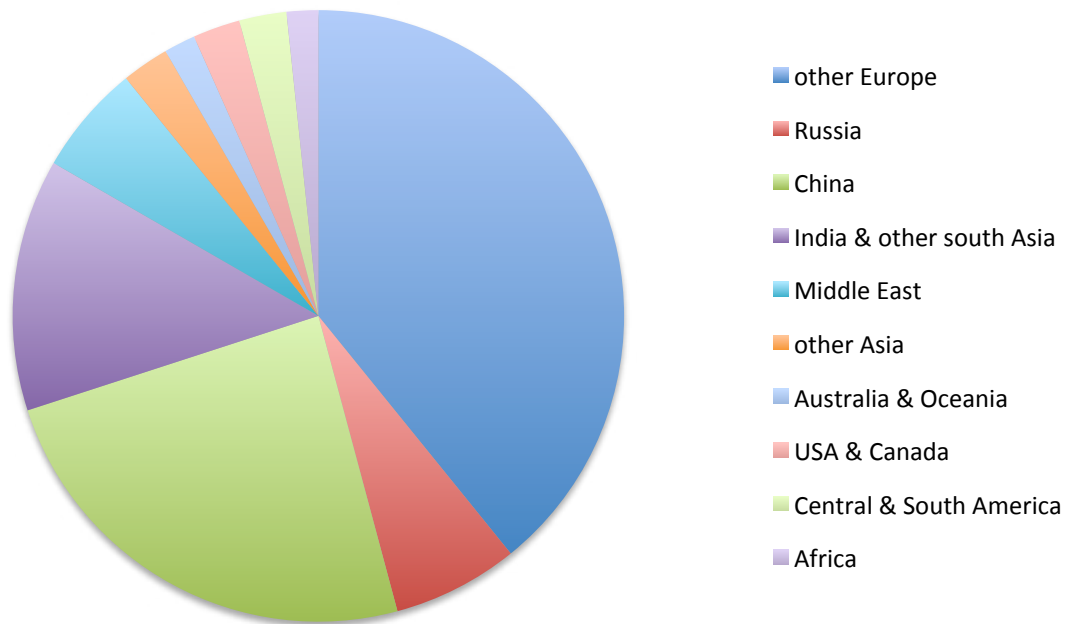


Figure 5: Nationalities of non-Finnish staff members 2012.

List of Personnel

Adhikari Prem	Doctoral Student	T building
Ahlroth Lauri	Doctoral Student	T building
Ahmed Imtiaj	Research Assistant	Kumpula
Ahokas Kimmo	Research Assistant	T building
Ahonen Teppo	Doctoral Student	Kumpula
Ain Mark	Project Researcher	OIH
Ajanki Antti	Doctoral Student	T building
Althermeler Nicole	Research Assistant	T building
Ammad-Ud-Din Muhammad	Doctoral Student	T building
An Chao	Research Assistant	Kumpula
Athukorala Kumaripaba	Doctoral Student	Kumpula
Aurell Erik	Professor	T building

Bayhan Suzan	Postdoctoral Research Scientist	OIH
Benner Christian	Research Assistant	Kumpula
Berg Jeremias	Research Assistant	Kumpula
Bergström-Lehtovirta Joanna	Doctoral Student	OIH
Bhattacharya Sourav	Doctoral Student	Kumpula
Bingham Ella	Research Coordinator	OIH
Bomanson Jori	Research Assistant	T building
Brügge Kai	Research Assistant	Kumpula
Buntine Wray	HIIT Fellow	Kumpula
Cecchinato Marta	Research Assistant	Kumpula
Cech Luca	Research Assitant	Kumpula
Chen Xi	Doctoral Student	T building
Cheng Lu	Doctoral Student	Kumpula
Cui Yaqiong	Doctoral Student	Kumpula
De Silva Yagama Waruna	Research Assistant	Kumpula
Deng Yang	Doctoral Student	T building
Devadiga Ketan Uttam	Research Assistant	T building
Ding Yi	Doctoral Student	Kumpula
Dong Shichao	Research Assistant	T building
Du Mian	Research Assistant	Kumpula
Dubrovin Jori Juhani	Teaching Research Scientist	T building
Dutta Ritabrata	Postdoctoral Research Scientist	OIH
Entner Doris	Researcher	Kumpula
Eriksson-Bique Sylvester	Research Assistant	Kumpula
Eugster Manuel	Postdoctoral Research Scientist	OIH
Eyherabide Hugo	Postdoctoral Research Scientist	Kumpula
Floréen Patrik	Vice Director of HIIT	Kumpula, OIH
Forsblom Andreas	Research Assistant	Kumpula
Galbrun Esther	Doctoral Student	Kumpula
Gauriot Romain	Research Assistant	Kumpula
Georgatzis Konstantinos	Doctoral Student	T building
Georgii Elisabeth	Postdoctoral Research Scientist	OIH
Ghani Adnan	Doctoral Student	T building
Giaquinta Emanuele	Postdoctoral Research Scientist	Kumpula

Gillberg Leo	Doctoral Student	T building
Giurcaneanu Ciprian	Senior Research Scientist	Kumpula
Glowacka Dorota	Postdoctoral Research Scientist	Kumpula
Grazhdankin Evgeni	Research Assistant	Kumpula
Gross Oskar	Doctoral Student	Kumpula
Guo Haipeng	Research Assistant	Kumpula
Gurtov Andrei	Professor	OIH
Gutmann Michael	Postdoctoral Research Scientist	Kumpula, T building
Gönen Mehmet	Postdoctoral Research Scientist	T building
Göös Mika	Doctoral Student	Kumpula
Hankala Teemu	Research Assistant	T building
Hartke Klaus	Doctoral Student	T building
Haverinen Laura	Research Assistant	Kumpula
Heljanko Keijo	Professor	T building
Hemminki Samuli	Research Assistant	Kumpula
Hiroaki Sasaki	Senior Research Scientist	Kumpula
Hirvonen Juho	Research Assistant	Kumpula
Hoggan Eve	Postdoctoral Research Scientist	Kumpula
Hollmen Jaakko	Chief Research Scientist	T building
Holmqvist Iris	Project Secretary	OIH
Honkela Antti	Senior Research Scientist	Kumpula
Hoque Mohammad	Doctoral Student	T building
Hou Jian	Research Assistant	T building
Hoyer Patrik	Senior Research Scientist	Kumpula
Hoyo Rios Nicolas	Research Assistant	T building
Huq A M Anisul	Research Assistant	T building
Hyttinen Antti	Doctoral Student	Kumpula
Hyvärinen Antti	Postdoctoral Research Scientist	T building
Hyvärinen Aapo	Professor	Kumpula
Ishikawa Satoru	Doctoral Student	T building
Isojärvi Juha-Antti	Research Assistant	Kumpula
Jaakkola Tommi	HIIT Fellow	Kumpula
Jacucci Giulio	Professor	Kumpula
Janhunen Tomi	Professor	T building

Johnson Mikael	Doctoral Student	OIH
Junttila Tommi	Teaching Research Scientist	T building
Jylhä Antti	Postdoctoral Research Scientist	Kumpula
Järvisalo Matti	Postdoctoral Research Scientist	Kumpula
Jääskinen Väinö	Doctoral Student	Kumpula
Kaipiainen Samuli	Research Assistant	Kumpula
Kallio Mikko	Doctoral Student	T building
Kandemir Melih	Doctoral Student	T building
Kangas Juho-Kustaa	Research Assistant	Kumpula
Kangasharju Jussi	Professor	Kumpula
Kankainen Anu	Senior Research Scientist	OIH
Karila Arto	Senior Research Scientist	OIH
Karkulahti Ossi	Doctoral Student	Kumpula
Karvonen Kristiina	Senior Research Scientist	OIH
Kaski Petteri	Professor	T building
Kaski Samuel	Professor, Director of HIIT	OIH, Kumpula, T building
Kauppi Jukka-Pekka	Postdoctoral Research Scientist	Kumpula
Kauttio Janne	Research Assistant	T building
Kempa Dominik	Doctoral Student	Kumpula
Kemppinen Jukka	Senior Research Scientist	OIH
Khan Suleiman Ali	Doctoral Student	T building
Kindermann Roland	Doctoral Student	T building
Klami Arto	Postdoctoral Research Scientist	Kumpula, T building
Kludas Jana	Postdoctoral Research Scientist	T building
Kochaniewicz Gaja Agnieszka	Course Assistant	T building
Kohonen Jukka	Doctoral Student	Kumpula
Koivisto Mikko	Senior Research Scientist	Kumpula
Komu Miika	Doctoral Student	T building, OIH
Kontkanen Petri	Postdoctoral Research Scientist	Kumpula
Konyushkova Ksenia	Research Assistant	Kumpula
Korhonen Janne	Doctoral Student	Kumpula
Korpela Mikko	Doctoral Student	T building
Korzun Dmitry	Senior Research Scientist	OIH
Koskela Joakim	Doctoral Student	OIH

Kosunen Ilkka	Research Assistant	Kumpula
Kovanen Tony	Research Assistant	Kumpula
Kuikkaniemi Kai	Doctoral Student	OIH
Kuptsov Dmitriy	Doctoral Student	OIH
Kurki Jussi	Doctoral Student	Kumpula
Kuuppelomäki Päivi	Planning Officer	Kumpula
Kuzyk Anton	Doctoral Student	T building
Kähkönen Kari	Doctoral Student	T building
Kärkkäinen Juha	Senior Research Scientist	Kumpula
Laaksonen Antti	Doctoral Student	Kumpula
Lagerspetz Emil	Doctoral Student	Kumpula
Lagutin Dmitrij	Postdoctoral Research Scientist	OIH
Laine Tuomo	Secretary	OIH
Laitinen Tero	Doctoral Student	T building
Lampinen Airi	Doctoral Student	OIH
Langohr Laura	Doctoral Student	Kumpula
Laurinharju Juhana	Research Assistant	Kumpula
Lehdonvirta Vili	Postdoctoral Research Scientist	OIH
Lehmuskallio Asko	Project Researcher	OIH
Lehtinen Vilma	Doctoral Student	OIH
Lehtiö Anu	Research Assistant	OIH, Kumpula
Lehtonen Marko	Doctoral Student	OIH
Lei Hailin	Research Assistant	Kumpula
Leisti-Szymczak Anni	Research Assistant	OIH
Lempiäinen Tuomo	Research Assistant	Kumpula
Leppäaho Eemeli	Doctoral Student	T building
Leppänen Laura	Research Assistant	Kumpula
Lievonen Petri	Research Assistant	OIH
Liikkanen Lassi	Postdoctoral Research Scientist	OIH
Liimatainen Jukka	Project Researcher	OIH
Lijffijt Jeffrey	Doctoral Student	T building
Lin Ziyuan	Doctoral Student	T building
Linkola Simo	Research Assistant	Kumpula
Lintusaari Jarno	Research Assistant	T building

Liu Guohua	Postdoctoral Research Scientist	T building
Longi Krista	Research Assistant	Kumpula
Looga Vilen	Doctoral Student	T building
Losoi Markus	Research Assistant	T building
Luosto Panu	Doctoral Student	Kumpula
Luukkala Vesa-Veikko	Doctoral Student	T building
Malone Brandon	Postdoctoral Research Scientist	Kumpula
Manner Jukka	Professor	Kumpula
Mannila Heikki	Professor	T building
Mansikkaniemi Andre	Doctoral Student	T building
Markus Konrad	Project Researcher	OIH
Marttinen Pekka	Postdoctoral Research Scientist	T building
Medlar Alan	Researcher	Kumpula
Miettinen Minna	Doctoral Student	Kumpula
Miettunen Pirkko	Department Secretary	OIH
Mikkola Pekka	Research Assistant	Kumpula
Modig Arttu	Research Assistant	Kumpula
Moen Pirjo	Research Coordinator	Kumpula
Mohammed Abdulmelik Nesru	Research Assistant	T building
Myllymaa Kalle	Research Assistant	Kumpula
Myllymäki Petri	Professor	Kumpula
Mäkinen Veli	Professor	Kumpula
Määttä Jussi	Doctoral Student	T building
Nagar Rahul	Research Assistant	T building
Nechaev Boris	Doctoral Student	OIH
Nelimarkka Matti	Project Researcher	OIH
Niemelä Ilkka	Professor	T building
Niemenmaa Matti	Research Assistant	T building
Niemimäki Sami	IT Specialist	OIH
Nieminen Hanna	Research Assistant	T building
Niinimäki Teppo	Doctoral Student	Kumpula
Nikander Jan	Research Assistant	OIH
Nikkilä Mikko	Research Assistant	Kumpula
Nikolaevskiy Ilya	Research Assistant	OIH

Nouri Javad	Research Assistant	Kumpula
Nuorento Markus	IT Specialist	Kumpula
Nurmi Petteri	Postdoctoral Research Scientist	OIH, Kumpula
Nurminen Antti	Postdoctoral Research Scientist	OIH
Nybo Kristian	Doctoral Student	T building
Oikarinen Emilia	Postdoctoral Research Scientist	T building
Ojala Jouni	Research Assistant	OIH
Orponen Pekka	Professor	T building
Ou Zhonghong	Postdoctoral Research Scientist	T building
Paalasmaa Joonas	Doctoral Student	Kumpula
Papapetrou Panagiotis	Postdoctoral Research Scientist	T building
Parkkinen Juuso	Doctoral Student	T building
Patil Sameer	Postdoctoral Research Scientist	OIH
Peltola Janne	Research Assistant	T building
Peltonen Jaakko	Academy Research Fellow	T building
Penttilä Markus	Research Assistant	Kumpula
Perez Lopez Javier	Research Assistant	T building
Perkiö Jukka	Doctoral Student	OIH, Kumpula
Pervilä Mikko	Doctoral Student	Kumpula
Pessia Alberto	Doctoral Student	Kumpula
Pihlajamaa Aurora	Research Assistant	OIH
Pitkänen Olli	Senior Research Scientist	OIH
Polishchuk Tatiana	Doctoral Student	OIH
Polishchuk Valentin	Postdoctoral Research Scientist	Kumpula
Polli Anna Maria	Research Assistant	Kumpula
Puglisi Simon	Postdoctoral Research Scientist	Kumpula
Pulkkinen Teemu	Doctoral Student	Kumpula
Puolamäki Kai	Chief Research Scientist	T building
Puuronen Jouni	Doctoral Student	Kumpula
Pyykkö Joel	Research Assistant	Kumpula
Rahkola Jani	Research Assistant	Kumpula
Raita Eeva	Doctoral Student	OIH
Rajala Tuomas	Postdoctoral Research Scientist	T building
Rajaraman Swaminathan Vasanth	Research Assistant	T building

Rao Weixiong	Postdoctoral Research Scientist	Kumpula
Rasa Mikko	Research Assistant	OIH
Rasku Lari	Research Assistant	Kumpula
Ravaja Niklas	Professor	OIH
Ray Debarshi	Research Assistant	Kumpula
Regan John	Project Researcher	OIH
Reijonen Aki	Research Assistant	Kumpula
Reitmaa Jukka	Research Assistant	OIH
Remes Sami	Research Assistant	T building
Rinta-Koski Olli-Pekka	Doctoral Student	T building
Rintanen Jussi	Postdoctoral Research Scientist	T building
Rissanen Jorma	HIIT Fellow	Kumpula
Roos Teemu	Senior Research Scientist	Kumpula
Rousu Juho	Professor	T building
Ruotsalo Tuukka	Postdoctoral Research Scientist	OIH
Ruottu Toni	Research Assistant	Kumpula
Rybicki Joel	Doctoral Student	Kumpula
Saari Timo	Professor	OIH
Sahla Roosa	Research Assistant	T building
Salmela Leena	Postdoctoral Research Scientist	Kumpula
Salovaara Antti	Doctoral Student	OIH
Sandholm Max	Research Assistant	OIH
Sarvas Risto	Postdoctoral Research Scientist	OIH
Schumacher André	Postdoctoral Research Scientist	T building
Schönleben Oliver	Project Researcher	OIH
Seki Shinnosuke	Postdoctoral Research Scientist	T building
Seth Sohan	Postdoctoral Research Scientist	OIH
Shen Huibin	Research Assistant	Kumpula
Shubin Mikhail	Doctoral Student	Kumpula
Siekkinen Matti	Teaching Research Scientist	T building
Silfverberg Suvi	Doctoral Student	OIH
Siren Jouni	Doctoral Student	Kumpula
Siren Jukka	Postdoctoral Research Scientist	Kumpula
Siren Miika	Research Assistant	Kumpula

Solin Otto	Doctoral Student	Kumpula
Souza Medeiros De Andre Cesar	Research Assistant	T building
Spape Michiel	Postdoctoral Research Scientist	OIH
Sri Kalyanaraman Ramya	Doctoral Student	OIH
Stewart Craig	Researcher	Kumpula
Su Hongyu	Doctoral Student	T building, Kumpula
Summanen Iris	Research Assistant	OIH
Suomela Jukka	Postdoctoral Research Scientist	Kumpula
Suominen De Rios Noora	Secretary	OIH
Suvitaival Tommi	Doctoral Student	T building
Sysikaski Mikko	Research Assistant	Kumpula
Tamene Fitsum Tsegaye	Research Assistant	T building
Tarkoma Sasu	Professor	Kumpula
Terkki Eeva	Research Assistant	OIH
Teräs Sampo	Doctoral Student	OIH
Toivanen Aurora	Research Assistant	Kumpula
Toivanen Jukka	Doctoral Student	Kumpula
Toivola Janne	Doctoral Student	T building
Toivonen Hannu	Professor	Kumpula
Toivonen Jarkko	Doctoral Student	Kumpula
Tonteri Pekka	IT Manager	OIH
Topa Hande	Doctoral Student	T building
Tulilaulu Aurora	Research Assistant	Kumpula
Tuominen Antti	Research Assistant	Kumpula
Tyrväinen Lasse	Research Assistant	OIH, Kumpula
Ukkonen Antti	Postdoctoral Research Scientist	OIH
Ukkonen Esko	Professor	Kumpula
Uziela Karolis	Research Assistant	OIH, Kumpula
Vainio Niklas	Project Researcher	OIH
Valitutti Alessandro	Postdoctoral Research Scientist	Kumpula
Waltari Otto	Research Assistant	Kumpula
Wang Chiwei	Research Assistant	T building
Wang Liang	Doctoral Student	Kumpula
Wang Ziran	Research Assistant	Kumpula

Vanhatalo Jarno	Postdoctoral Research Scientist	
Varjonen Samu	Doctoral Student	Kumpula
Wettig Johannes	Doctoral Student	Kumpula
Vigano Cristina	Research Assistant	Kumpula
Vihavainen Sami	Doctoral Student	OIH
Viinikanoja Jaakko	Doctoral Student	T building
Wijekoon Dinesh	Doctoral Student	Kumpula
Vilkki Max	Research Assistant	OIH
Virtanen Seppo	Doctoral Student	T building
Virtanen Perttu	Postdoctoral Research Scientist	OIH
Visala Kari	Doctoral Student	OIH
Vähäkangas Teemu	Doctoral Student	OIH, Kumpula
Välimäki Niko	Doctoral Student	Kumpula
Xiao Yu	Postdoctoral Research Scientist	T building
Xiong Jie	Doctoral Student	Kumpula
Xu Lili	Research Assistant	Kumpula
Yangerber Roman	Senior Research Scientist	Kumpula
Ye Yina	Research Assistant	Kumpula
Ylä-Jääski Antti	Professor	T building
Zhang Zhengkui	Research Assistant	T building
Zhao Kai	Doctoral Student	Kumpula
Zhou Fang	Postdoctoral Research Scientist	Kumpula
Zou Yuan	Doctoral Student	Kumpula

D. Publications

Publications 2006 - 2012	2006	2007	2008	2009	2010	2011	2012
Articles in international scientific journals with referee practice	38	50	67	51	69	79	81
Articles in international edited works and conference proceedings with referee practice	101	94	126	126	153	134	128
Scientific monographs and edited books	2	6	3	6	8	9	8
Other publications	23	19	40	25	25	29	31
Computer programs and algorithms	1	1	0	1	10	8	3
Doctoral theses	7	9	14	13	10	7	10
Licenciate theses	2	0	1	1	0	0	0
Master's theses	10	8	76	27	33	53	55
Total	184	187	327	250	308	319	316

D.1. Articles in international scientific journals with referee practice

Andreas Björklund, Thore Husfeldt, Petteri Kaski, and Mikko Koivisto. The traveling salesman problem in bounded degree graphs. *ACM Transactions on Algorithms.*, 8(2):Article Number: 18, 2012.

Gülefsan Bozkurt Gönen, Mehmet Gönen, and Fikret Gürgen. Probabilistic and discriminative group-wise feature selection methods for credit risk analysis. *Expert Systems with Applications*, 39(14):11709–11717, 2012.

José Caldas, Nils Gehlenborg, Eeva Kettunen, Ali Faisal, Mikko Rönty, Andrew G. Nicholson, Sakari Knuttila, Alvis Brazma, and Samuel Kaski. Data-driven information retrieval in heterogeneous collections of transcriptomics data links SIM2s to malignant pleural mesothelioma. *Bioinformatics*, 28(2):246–253, 2012.

Santiago Castillo-Ramirez, Jukka Corander, Pekka Marttinen, Mona Aldeljawi, William Hanage, Henrik Westh, Kit Boye, Zeynep Gulay, Stephen Bentley, Julian Parkhill, Matthew Holden, and Edward Feil. Phylogeographic variation in recombination rates within a global clone of Methicillin-Resistant *Staphylococcus aureus* (MRSA). *Genome Biology*, 13(12):R126, 2012.

Guillaume Chanel, J Matias Kivikangas, and Niklas Ravaja. Physiological compliance for social gaming analysis: Cooperative versus competitive play. *Interacting with Computers*, 24(4):306–316, 2012.

Lu Cheng, Alan W. Walker, and Jukka Corander. Bayesian estimation of bacterial community composition from 454 sequencing data. *Nucleic Acids Research*, 40(12):5240–5249, 2012.

Julia Chuyko, Tatiana Polishchuk, Vladimir Mazalov, and Andrei Gurtov. Wardrop equilibria and price of anarchy in multipath routing games with elastic traffic. *International Journal of Mathematics, Game Theory and Algebra*, 20(4), 2012.

- Eliza Congdon, Susan Service, Jaana Wessman, Jouni K. Seppänen, Stefan Schönauer, Jouko Miettunen, Hannu Turunen, Markku Koiranen, Matti Joukamaa, Marjo-Riitta Järvelin, Leena Palotie, Juha Veijola, Heikki Mannila, Tiina Paunio, and Nelson B. Freimer. Early environment and neurobehavioral development predict adult temperament clusters. *PLoS One*, 7(7):Article Number: e38065, 2012.
- Thomas Richard Connor, Jukka Corander, and William Paul Hanage. Population subdivision and the detection of recombination in non-typable *Haemophilus influenzae*. *Microbiology*, 158:2958–2964, 2012.
- Jukka Corander, Tero Aittokallio, Samuli Ripatti, and Samuel Kaski. The rocky road to personalized medicine: computational and statistical challenges. *Personalized Medicine*, 9(2):109–114, 2012.
- Jukka Corander, Thomas R. Connor, Cliona A. O’Dwyer, J. Simon Kroll, and William P. Hanage. Population structure in the *Neisseria*, and the biological significance of fuzzy species. *Journal of the Royal Society Interface*, 9(71):1208–1215, 2012.
- Yong Cui, Wenjie Hu, Hongyi Wang, Dechang Chen, Sasu Tarkoma, and Antti Ylä-Jääski. Probabilistic multi-path routing for multimedia over wireless mesh networks. *Ad-Hoc & Sensor Wireless Networks*, 14(3-4):205–225, 2012.
- Elena Czeizler, Eugen Czeizler, Bogdan Iancu, and Ion Petre. Quantitative model refinement as a solution to the combinatorial size explosion of biomodels. *Electronic Notes in Theoretical Computer Science*, (284):35–53, 2012.
- Eugen Czeizler, Andrzej Mizera, Elena Czeizler, Ralph-Johan Back, John E. Eriksson, and Ion Petre. Quantitative analysis of the self-assembly strategies of intermediate filaments from tetrameric vimentin. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 9(3):885–898, 2012.
- Eugen Czeizler, Vladimir Rogojin, and Ion Petre. The phosphorylation of the heat shock factor as a modulator for the heat shock response. *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 9(5):885–898, 2012.
- Weronika Delezuch, Pekka Marttinen, Hannu Kokki, Markku Heikkinen, Kari Vanamo, Kari Pulkki, and Irma Matinlauri. Serum and CSF soluble CD26 and CD30 concentrations in healthy pediatric surgical outpatients. *Tissue Antigens*, 80(4):368–375, 2012.
- Jori Dubrovin, Tommi Junttila, and Keijo Heljanko. Exploiting step semantics for efficient bounded model checking of asynchronous systems. *Science of Computer Programming*, 77(10-11):1095–1121, 2012.
- Andreas Dünser, Mark Billinghurst, James Wen, Ville Lehtinen, and Antti Nurminen. Exploring the use of handheld AR for outdoor navigation. *Computers Graphics*, 36(8):1095, 2012.
- Inger Ekman, Guillaume Chanel, J. Matias Kivikangas, Simo Järvelä, Mikko Salminen, and Niklas Ravaja. Social interaction in games: Measuring physiological linkage and social presence. *Simulation & Gaming*, 43(2):321–338, 2012.
- Jussi T. Eronen, Mikael Fortelius, A. Micheels, F.T. Portmann, Kai Puolamäki, and Christine M. Janis. Neogene aridification of the Northern hemisphere. *Geology*, 40(9):823–826, 2012.
- Lauri Eronen and Hannu Toivonen. Biomine: Predicting links between biological entities using network models of heterogeneous databases. *BMC Bioinformatics*, 13(119), 2012.
- Esther Galbrun and Pauli Miettinen. From black and white to full color: extending redescription mining outside the Boolean world. *Statistical Analysis and Data Mining*, 5(4):284–303, 2012.
- Elisabeth Georgii, Jarkko Salojärvi, Mikael Brosche, Jaakko Kangasjärvi, and Samuel Kaski. Targeted retrieval of gene expression measurements using regulatory models. *Bioinformatics*, 28(18):2349–2356, 2012.
- Peter Glaus, Antti Honkela, and Magnus Rattray. Identifying differentially expressed transcripts from RNA-seq data with biological variation. *Bioinformatics*, 28(13):1721–1728, 2012.

- Michael U. Gutmann and Aapo Hyvärinen. Noise-contrastive estimation of unnormalized statistical models, with applications to natural image statistics. *Journal of Machine Learning Research*, 13:307–361, 2012.
- Mehmet Gönen. Predicting drug-target interactions from chemical and genomic kernels using Bayesian matrix factorization. *Bioinformatics*, 28(18):2304–2310, 2012.
- Hannes Heikinheimo, Jussi T. Eronen, Alexander Sennikov, Christopher D. Preston, Emilia Oikarinen, Pertti Uotila, Heikki Mannila, and Mikael Fortelius. Convergence in the distribution patterns of Europe’s plants and mammals is due to environmental forcing. *Journal of Biogeography*, 39(9):1633–1644, 2012.
- Markus Heinonen, H. Shen, N. Zamboni, and Juho Rousu. Metabolite identification and molecular fingerprint prediction through machine learning. *Bioinformatics*, 28(18):2333–2341, 2012.
- Keijo Heljanko, Misa Keinänen, Martin Lange, and Ilkka Niemelä. Solving parity games by a reduction to SAT. *Journal of Computer and System Sciences*, 78(2):430–440, 2012.
- Antti Hyttinen, Frederick Eberhardt, and Patrik Hoyer. Learning linear cyclic causal models with latent variables. *Journal of Machine Learning Research*, 13:3387–3439, 2012.
- Giulio Jacucci and A. Telier. Drawing things together. *Interactions (New York)*, 19(2):34–37, 2012.
- Petteri Kaski, Mahdad Khatirinejad, and Patric R. J. Östergård. Steiner triple systems satisfying the 4-vertex condition. *Designs, Codes and Cryptography*, 62(3):323–330, 2012.
- Jari Kätsyri, Riitta Hari, Niklas Ravaja, and Lauri Nummenmaa. The opponent matters: Elevated fMRI reward responses to winning against a human versus a computer opponent during interactive video game playing. *Cerebral Cortex*, 2012.
- Suleiman A. Khan, Ali Faisal, John Patrick Mpindi, Juuso A. Parkkinen, Tuomo Kalliokoski, Antti Poso, Olli P. Kallioniemi, Krister Wennerberg, and Samuel Kaski. Comprehensive data-driven analysis of the impact of chemoinformatic structure on the genome-wide biological response profiles of cancer cells to 1159 drugs. *BMC Bioinformatics*, 13:Article Number: 112, 2012.
- Joondong Kim, Joseph S. B. Mitchell, Valentin Polishchuk, Shang Yang, and Jingyu Zou. Routing multi-class traffic flows in the plane. *Computational Geometry*, 45(3):99–114, 2012.
- Dmitry Korzun, Ivan Galov, and Sergey Balandin. Proactive personalized mobile multi-blogging service on Smart-M3. *Journal of Computing and Information Technology - CIT*, 20(3):175–182, 2012.
- Miika Koskinen, Jaakko Viinikanoja, Mikko Kurimo, Arto Klami, Samuel Kaski, and Riitta Hari. Identifying fragments of natural speech from the listener’s MEG signals. *Human Brain Mapping*, 34(6):1477–1489, 2012.
- Irina Kostitsyna and Valentin Polishchuk. Simple wriggling is hard unless you are a fat hippo. *Theory of Computing Systems*, 50(1):93–110, 2012.
- Jari Kätsyri, Riitta Hari, Niklas Ravaja, and Lauri Nummenmaa. The opponent matters: Elevated fMRI reward responses to winning against a human versus a computer opponent during interactive video game playing. *Cerebral Cortex*, 2012.
- Jari Kätsyri, Niklas Ravaja, and Mikko Salminen. Aesthetic images modulate emotional responses to reading news messages on a small screen: A psychophysiological investigation. *International Journal of Human-Computer Studies*, 70(1):72–87, 2012.
- Teemu D. Laajala, Jukka Corander, Niina M. Saarinen, Katja Mäkelä, Saija Savolainen, Mari I. Suominen, Esa Alhoniemi, Sari Mäkelä, Matti Poutanen, and Tero Aittokallio. Improved statistical modeling of tumor growth and treatment effect in preclinical animal studies with highly heterogeneous responses in vivo. *Clinical Cancer Research*, 18(16):4385–4396, 2012.
- Jussi Lahtinen, Janne Valkonen, Kim Björkman, Juho Frits, Ilkka Niemelä, and Keijo Heljanko. Model checking of safety-critical software in the nuclear engineering domain. *Reliability Engineering & System Safety RESS*, (105):104–113, 2012.

- Laura A Langohr, Vid Podpecan, Marko Petek, Igor Mozetic, Kristina Gruden, Nada Lavrac, and Hannu Toivonen. Contrasting subgroup discovery. *Computer Journal*, 2012.
- Gayle Leen, Jaakko Peltonen, and Samuel Kaski. Focused multi-task learning in a Gaussian process framework. *Machine Learning*, 89(1-2, SI):157–182, 2012.
- Lassi A. Liikkanen. Inducing involuntary musical imagery: An experimental study. *Musicae Scientiae*, 16(2):217–234, 2012.
- Lassi A. Liikkanen. Involuntary music among normal population and clinical cases. *Advances in Clinical Neuroscience and Rehabilitation*, 12(4):12–13, 2012.
- Lassi A. Liikkanen. Musical activities predispose to involuntary musical imagery. *Psychology of Music*, 40(2):236–256, 2012.
- Jefrey Lijffijt and Stefan Th. Gries. Correction to Stefan Th. Gries' dispersions and adjusted frequencies in corpora. *International Journal of Corpus Linguistics*, 17(1):147–149, 2012.
- Liping Liu, Kai Puolamäki, Jussi T. Eronen, Majid M. Ataabadi, Elina Hernesniemi, and Mikael Fortelius. Dental functional traits of mammals resolve productivity in terrestrial ecosystems past and present. *Proceedings of the Royal Society B*, 279(1739):2793–2799, 2012.
- Andrey Lukyanenko, Evzey Morozov, and Andrei Gurtov. An adaptive backoff protocol with Markovian contention window control. *Communications in Statistics - Simulation and Computation*, 41(7):1093–1106, 2012.
- Veli Mäkinen, Leena Salmela, and Johannes Ylinen. Normalized N50 assembly metric using gap-restricted co-linear chaining. *BMC Bioinformatics*, 13(255), 2012.
- Pekka Marttinen, William P. Hanage, Nicholas J. Croucher, Thomas R. Connor, Simon R. Harris, Stephen D. Bentley, and Jukka Corander. Detection of recombination events in bacterial genomes from large population samples. *Nucleic Acids Research*, 40(1), 2012.
- Alan Medlar, Dorota Glowacka, Horia Stanescu, Kevin Bryson, and Robert Kleta. SwiftLink: Parallel MCMC linkage analysis utilising multicore CPU and GPU. *Bioinformatics*, 2012.
- Andrzej Mizera, Eugen Czeizler, and Ion Petre. Self-assembly models of variable resolution. *LNBI Transactions on Computational Systems Biology*, XIV(7625):181–203, 2012.
- Bjarke Molgaard, Tareq Hussein, Jukka Corander, and Kaarle Hämeri. Forecastingsize-fractionated particle number concentrations in the urban atmosphere. *Atmospheric Environment*, 46:155–163, 2012.
- Rossana Moroni, Laura Aalberg, Tapani Reinikainen, and Jukka Corander. Bayesian adaptive approach to estimating sample sizes for seizures of illicit drugs. *Journal of Forensic Sciences*, 57(1):80–85, 2012.
- Matti Niemenmaa, Alekski Kallio, André Schumacher, and Petri Klemelä. Hadoop-BAM: Directly manipulating next generation sequencing data in the cloud. *Bioinformatics*, 28(6):876–877, 2012.
- Tarja Niini, Ilari Scheinin, Leo Lahti, Suvi Savola, Fredrik Mertens, Jaakko Hollmén, Tom Böhling, Aarne Kivioja, Karolin H. Nord, and Sakari Knuutila. Homozygous deletions of cadherin genes in chondrosarcoma - an array CGH study. *Cancer Genetics*, 205(11):588–593, 2012.
- Henrik Nyman, Tarja Talonen, Antti Roine, Mikko Hupa, and Jukka Corander. Statistical approach to quality control of large thermodynamic databases. *Metallurgical and Materials Transactions B - Process Metallurgy and Materials Processing Science*, 43(5):1113–1118, 2012.
- Antti Oulasvirta, Antti Nurminen, and Tiia Suomalainen. How real is real enough? Optimal reality sampling for fast recognition of mobile imagery. *ACM Transactions on Applied Perception*, 9(4):18, 2012.
- Tomi Peltola, Pekka Marttinen, and Aki Vehtari. Finite adaptation and multistep moves in the Metropolis-Hastings algorithm for variable selection in genome-wide association analysis. *PLoS ONE*, 7(11):49445, 2012.

- Olli Pitkänen and Helen Lehto. Legal aspects of living labs. *International Journal of Product Development*, 17(1):8–22, 2012.
- Olli Pitkänen and Virpi Kristiina Tuunainen. Disclosing personal data socially - an empirical study on Facebook user's privacy awareness. *Journal of Information Privacy & Security*, 8(1):3–29, 2012.
- Miguel A. Prada, Janne Toivola, Jyrki Kullaa, and Jaakko Hollmén. Three-way analysis of structural health monitoring data. *Neurocomputing*, (80):119–128, 2012.
- Pavan Ramkumar, Lauri Parkkonen, Riitta Hari, and Aapo Hyvärinen. Characterization of neuromagnetic brain rhythms over time scales of minutes using spatial independent component analysis. *Human Brain Mapping*, 33(7):1648–1662, 2012.
- Weixiong Rao, Lei Chen, Shudong Chen, and Sasu Tarkoma. Evaluating continuous top-k queries over document streams. *World Wide Web (New York)*, pages 1–25, 2012.
- Leena Salmela. Average complexity of backward q-gram string matching algorithms. *Information Processing Letters*, 112(11):433–437, 2012.
- Pasi Sarolahti, Jörg Ott, and Jussi Kangasharju. Locations vs. identities in internet content: Applying information-centric principles in today's networks. *IEEE Communications Magazine*, 50(12):54–59, 2012.
- Shinnosuke Seki. Absoluteness of subword inequality is undecidable. *Theoretical Computer Science*, (418):116–120, 2012.
- Deborah J. Serrien, Michael Sovijärvi-Spapé, and Bryn Farnsworth. Bimanual control processes and the role of handedness. *Neuropsychology*, 26(6):802, 2012.
- Deborah J. Serrien, Michael Sovijärvi-Spapé, and Gita Rana. Subliminal priming and effects of hand dominance. *Acta Psychologica*, 141(1):73–77, 2012.
- Leila M. Sihvonen, Kaisa Jalkanen, Elisa Huovinen, Susanna Toivonen, Jukka Corander, Markku Kuusi, Mikael Skurnik, Anja Siitonen, and Kaisa Haukka. Clinical isolates of *Yersinia enterocolitica* Biotype 1A represent two phylogenetic lineages with differing pathogenicity-related properties. *BMC Microbiology*, 12(208), 2012.
- Sasu Tarkoma, Christian Rothenberg, and Eemil Lagerspetz. Theory and practice of Bloom filters for distributed systems. *Communications Surveys & Tutorials*, 14(1):131–155, 2012.
- Pia Tikka, Aleksander Väljamäe, Aline de Borst, Roberto Pugliese, Niklas Ravaja, Mauri Kaipainen, and Tapio Takala. Enactive cinema paves way for understanding complex real-time social interaction in neuroimaging experiments. *Frontiers in Human Neuroscience*, 6(Article 298):1–6, 2012.
- Michalis K Titsias, Antti Honkela, Neil D Lawrence, and Magnus Rattray. Identifying targets of multiple co-regulating transcription factors from expression time-series by Bayesian model comparison. *BMC Systems Biology*, 6:Article Number: 53, 2012.
- Niko Välimäki, Susana Ladra, and Veli Mäkinen. Approximate all-pairs suffix/prefix overlaps. *Information and Computation*, 213:49–58, 2012.
- Perttu Virtanen. Claim clarity, full disclosure and software patents. *Nordiskt Immateriellt Rättskydd*, 2012(2):141–155, 2012.
- Perttu Virtanen. Football Dataco v Yahoo!: The ECJ interprets the database directive. *SCRIPTed*, 2012(2):258–267, 2012.
- Jaana Wessman, Stefan Schönauer, Jouko Miettunen, Hannu Turunen, Pekka Parviainen, Jouni K. Seppänen, Eliza Congdon, Susan Service, Markku Koiranen, Jesper Ekelund, Jaana Laitinen, Anja Taanila, Tuija Tammelinen, Mirka Hintsanen, Laura Pulkki-Raback, Liisa Keltikangas-Järvinen, Jorma Viikari, Olli T. Raitakari, Matti Joukamaa, Marjo-Riitta Järvelin, Nelson Freimer, Leena Palotie, Juha Veijola, Heikki Mannila, and Tiina Paunio. Temperament clusters in a normal population: Implications for health and disease. *PLoS One*, 7(7):Article Number: e33088, 2012.

Rob J. L. Willems, Janetta Top, Willem van Schaik, Helen Leavis, Marc Bonten, Jukka Siren, William P. Hanage, and Jukka Corander. Restricted gene flow among hospital subpopulations of *Enterococcus faecium*. *mBio*, 3(4), 2012.

Yu Xiao, Wei Li, Matti Siekkinen, Petri Savolainen, Antti Ylä-Jääski, and Pan Hui. Power management for wireless data transmission using complex event processing. *IEEE Transactions on Computers*, 61(12):1765–1777, 2012.

D. 2. Articles in international edited works and conference proceedings with referee practice

Prem Raj Adhikari and Jaakko Hollmén. Fast progressive training of mixture models for model selection. In J.-G. Ganascia, P. Lenca, and J.-M. Petit, editors, *Proceedings of Fifteenth International Conference on Discovery Science (DS 2012)*, pages 194–208. Springer, October 2012.

Prem Raj Adhikari and Jaakko Hollmén. Multiresolution mixture modeling using merging of mixture components. In Steven C.H. Hoi and Wray Buntine, editors, *Proceedings of Fourth Asian Conference on Machine Learning (ACML 2012)*, pages 17–32, November 2012.

Lauri Ahlroth and Pekka Orponen. Unordered constraint satisfaction games. In Branislav Rován, Vladimiro Sassone, and Peter Widmayer, editors, *Mathematical Foundations of Computer Science 2012*, pages 64–75. Springer, August 2012.

Esther Arkin, Alon Efrat, George Hart, Irina Kostitsyna, Alexander Kroeller, Joseph Mitchell, and Valentin Polishchuk. Scandinavian thins on top of cake: on the smallest one-size-fits-all box. In *Proceedings of the 6th International Conference on Fun with Algorithms (FUN 2012)*, pages 16–27, 2012.

Sourav Bhattacharya, Patrik Floréen, Andreas Forsblom, Samuli Hemminki, Petri Myllymäki, Petteri Nurmi, Teemu Pulkkinen, and Antti Salovaara. Ma\$\$ive- an intelligent mobile grocery assistant. In *Proceedings of Eighth International Conference on Intelligent Environments (IE 2012)*, pages 165–172, 2012.

Andreas Björklund, Thore Husfeldt, Petteri Kaski, Mikko Koivisto, Jesper Nederlof, and Pekka Parviainen. Fast zeta transforms for lattices with few irreducibles. In *Proceedings of the 23rd Annual ACM-SIAM Symposium on Discrete Algorithms (SODA '12)*, pages 1436–1444, 2012.

Eugen Czeizler and Alexandru Popa. Synthesizing minimal tile sets for complex patterns in the framework of patterned DNA self-assembly. In Darko Stefanovic and Andrew J. Turberfield, editors, *DNA Computing and Molecular Programming - 18th International Conference, DNA 18. Proceedings*, pages 58–72. Springer, August 2012.

Aaron Yi Ding, Pan Hui, Markku P I Kojo, and Sasu Tarkoma. Enabling energy-aware mobile data offloading for smartphones through vertical collaboration. In *Proceedings of ACM International Conference on Emerging Networking EXperiments and Technologies (ACM CoNEXT 2012)*, PhD Student Workshop, pages 27–28, 2012.

Wolfgang Dvorak, Matti Järvisalo, Johannes Wallner, and Stefan Woltran. CEGARTIX: A SAT-based argumentation system. In *Proceedings of the 3rd Workshop on Pragmatics of SAT*, 2012.

Wolfgang Dvorak, Matti Järvisalo, Johannes Wallner, and Stefan Woltran. Complexity-sensitive decision procedures for abstract argumentation. In *Proceedings of the 13th International Conference on Principles of Knowledge Representation and Reasoning (KR 2012)*, 2012.

Doris Entner and Patrik Hoyer. Estimating a causal order among groups of variables in linear models. In *Proceedings of International Conference on Artificial Neural Networks (ICANN- 2012)*, *Lecture Notes in Computer Science*, pages 83–90, 2012.

Doris Entner, Patrik Hoyer, and Peter Spirtes. Statistical test for consistent estimation of causal effects in linear non-Gaussian models. In *JMLR Workshop and Conference Proceedings 22 (AISTATS-2012)*, pages 364–372, 2012.

- Ali Faisal, Jussi Gillberg, Jaakko Peltonen, Gayle Leen, and Samuel Kaski. Sparse nonparametric topic model for transfer learning. In Proceedings of 20th European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning, pages 269–274, April 2012.
- Johannes Fischer, Travis Gagie, Tsvi Kopelowitz, Moshe Lewenstein, Veli Mäkinen, Leena Salmela, and Niko Välimäki. Forbidden patterns. In Proceedings of the 10th Latin American Symposium on Theoretical Informatics (LATIN 2012), Lecture Notes in Computer Science, pages 327–337. Springer Berlin Heidelberg, 2012.
- Andreas Forsblom, Petteri Nurmi, Pirkka Åman, and Lassi Liikkanen. Out of the bubble: serendipitous event recommendations at an urban music festival. In Proceedings of the 2012 ACM International Conference on Intelligent User Interfaces (IUI '12), pages 253–256, 2012.
- Esther Galbrun and Angelika Kimmig. Towards finding relational redescrptions. In Proceedings of the 15th International Conference on Discovery Science (DS 2012), Lecture Notes in Computer Science, pages 52–66. Springer Berlin Heidelberg, 2012.
- Esther Galbrun and Pauli Miettinen. A case of visual and interactive data analysis: Geospatial redescription mining. In Proceedings of ECML PKDD '12 Workshop on Instant Interactive Data Mining, 2012.
- Esther Galbrun and Pauli Miettinen. Siren: An interactive tool for mining and visualizing geospatial redescrptions [Demo]. In Proceedings of the 18th ACM SIGKDD international conference on Knowledge discovery and data mining (KDD '12), pages 1544–1547, 2012.
- Luciano Gamberini, Anna Spagnolli, Nicola Corradi, Giulio Jacucci, Giovanni Tusa, Topi Mikkola, Luca Zamboni, and Eve Hoggan. Tailoring feedback to users' actions in a persuasive game for household electricity conservation. In Proceedings of the 7th International Conference on Persuasive Technology: Design for Health and Safety (Persuasive 2012), pages 100–111, 2012.
- Serge Gaspers, Mikko Koivisto, Mathieu Liedloff, Sebastian Ordyniak, and Stefan Szeider. On finding optimal polytrees. In Proceedings of the Twenty-Sixth AAAI Conference on Artificial Intelligence (AAAI 2012), 2012.
- Elisabeth Georgii and Koji Tsuda. Density-based set enumeration in structured data. In Matthias Dehmer and Subhash C Basak, editors, Statistical and Machine Learning Approaches for Network Analysis, pages 261–301. John Wiley & Sons, Inc., 2012.
- Ciprian Doru Giurcaneanu, Panu Luosto, and Petri Kontkanen. On the performance of histogram-based entropy estimators. In Proceedings of IEEE International Workshop on Machine Learning for Signal Processing, 2012.
- Mika Göös, Juho Hirvonen, and Jukka Suomela. Lower bounds for local approximation. In Proceedings of the 2012 ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing (PODC'12), pages 175–184, 2012.
- Mika Göös and Jukka Suomela. No sublogarithmic-time approximation scheme for bipartite vertex cover. In Proceedings of the 26th International Symposium on Distributed Computing (DISC 2012), Lecture Notes in Computer Science, pages 181–194. Springer Berlin Heidelberg, 2012.
- Tobias Andersson Granberg and Valentin Polishchuk. Socially optimal allocation of ATM resources via truthful market-based mechanisms. In Proceedings of the 2nd SESAR Innovation Days, 2012.
- Oskar Gross, Hannu Toivonen, Jukka Toivanen, and Alessandro Valitutti. Lexical creativity from word associations. In Proceedings of the 7th IEEE International Conference on Knowledge, Information and Creativity Support Systems (KICSS 2012), pages 35–42, 2012.
- Michael Gutmann and Aapo Hyvärinen. Learning a selectivity–invariance–selectivity feature extraction architecture for images. In Proceedings of International Conference on Pattern Recognition (ICPR 2012), 2012.
- Mehmet Gönen. Bayesian efficient multiple kernel learning. In Proceedings of the 29th International Conference on Machine Learning, pages 1–8, July 2012.
- Mehmet Gönen. A Bayesian multiple kernel learning framework for single and multiple output regression. In Proceedings of the 20th European Conference on Artificial Intelligence, pages 354–359, 2012.

- Mehmet Gönen. Bayesian supervised multilabel learning with coupled embedding and classification. In Proceedings of the 12th SIAM International Conference on Data Mining, pages 367–378, 2012.
- Henning Hasemann, Juho Pekka Hirvonen, Joel Rybicki, and Jukka Suomela. Deterministic local algorithms, unique identifiers, and fractional graph colouring. In Proceedings of the 19th International Colloquium on Structural Information and Communication Complexity (SIROCCO 2012), Lecture Notes in Computer Science, pages 48–60. Springer Berlin Heidelberg, 2012.
- Lauri Hella, Matti Järvisalo, Antti Kuusisto, Juhana Laurinharju, Tuomo Lempiäinen, Kerkko Luosto, Jukka Suomela, and Jonni Virtema. Weak models of distributed computing, with connections to modal logic. In Proceedings of the 2012 ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing (PODC'12), pages 185–194, 2012.
- Herkko Hietanen, Antti Salovaara, Kumaripaba Athukorala, and Yefeng Liu. <insert image>, helping in the legal use of open images. In Conference on Human Factors in Computing Systems (CHI 2012), page 10. ACM, 2012.
- Juho Hirvonen and Jukka Suomela. Distributed maximal matching: Greedy is optimal. In Proceedings of the 2012 ACM SIGACT-SIGOPS Symposium on Principles of Distributed Computing (PODC'12), pages 165–174, 2012.
- Eve Hoggan and Stephen Brewster. Non-speech auditory and crossmodal output. In The Human-Computer Interaction Handbook: Fundamentals, Evolving Technologies, and Emerging Applications. Taylor & Francis, 3rd edition, 2012.
- Eve Hoggan, Craig Stewart, Laura Haverinen, Giulio Jacucci, and Vuokko Lantz. Pressages: Augmenting phone calls with non-verbal messages. In Proceedings of the 25th Annual ACM Symposium on User Interface Software and Technology (UICT'12), 2012.
- Jaakko Hollmén. Mixture modeling of gait patterns from sensor data. In Proceedings of the 5th International Conference on Pervasive Technologies and Relative to Assistive Environments. ACM, 2012.
- Kai Huotari, and Juho Hamari. Defining gamification: a service marketing perspective. In Proceeding of the 16th International Academic MindTrek Conference. ACM, 2012.
- Antti Hyttinen, Frederick Eberhardt, and Patrik Hoyer. Causal discovery of linear cyclic models from multiple experimental data sets with overlapping variables. In Proceedings of the 28th Conference on Uncertainty in Artificial Intelligence 2012 (UAI-12), 2012.
- Jaana Hyvärinen, Sampo Teräs, Kirsikka Vaajakallio, Johanna Fräki, and Virpi Roto. Enhancing the transparency of the local and organic food supply network. In Food and Interaction Design workshop at CHI2012, pages 0–1, 2012.
- Esa Hyytiä, Pasi Lassila, Jörg Ott, and Jussi Kangasharju. Floating information with stationary nodes. In Proceedings of the 8th International Workshop on Spatial Stochastic Models for Wireless Networks in conjunction with the 10th International Symposium on Modeling and Optimization in Mobile, Ad Hoc and Wireless Networks (WiOpt 2012), pages 361–366, 2012.
- Jun ichiro Hirayama, Aapo Hyvärinen, and Shin Ishii. Structural equations and divisive normalization for energy-dependent component analysis. In Advances in Neural Information Processing Systems (NIPS 2011), Volume 24, 2012.
- Tomi Janhunen and Vesa Luukkala. Meta programming with answer sets for smart spaces. In Markus Krötzsch and Umberto Straccia, editors, Proceedings of the 6th International Conference on Web Reasoning and Rule Systems, pages 106–121, Vienna, September 2012. Springer.
- Tomi Janhunen and Ilkka Niemelä. Applying visible strong equivalence in answer-set program transformations. In Esra Erdem, Joohyung Lee, Yuliya Lierler, and David Pearce, editors, Correct Reasoning - Essays on Logic-Based AI in Honour of Vladimir Lifschitz, pages 363–379. Springer, Berlin, 2012.
- Simo Järvelä, Inger Ekman, J Matias Kivikangas, and Niklas Ravaja. Digital games as experiment stimulus. In Proceedings of DiGRA Nordic 2012 Conference: Local and Global – Games in Culture and Society, 2012.

- Ilpo Järvinen, Aaron Yi Ding, Aki Nyrhinen, and Markku Kojo. Harsh RED: Improving RED for Limited Aggregate Traffic. In Proceedings of 26th IEEE International Conference on Advanced Information Networking and Applications (IEEE AINA 2012), pages 832-840, 2012.
- Matti Järvisalo, Marijn Heule, and Armin Biere. Inprocessing rules. In Proceedings of the 6th International Joint Conference on Automated Reasoning (IJCAR 2012), Lecture Notes in Computer Science, pages 355–370. Springer Berlin Heidelberg, 2012.
- Matti Järvisalo, Petteri Kaski, Mikko Koivisto, and Janne Henrik Korhonen. Finding efficient circuits for ensemble computation. In Proceedings of the 15th International Conference on Theory and Applications of Satisfiability Testing (SAT 2012), Lecture Notes in Computer Science, pages 369–382. Springer Berlin Heidelberg, 2012.
- Matti Järvisalo, Arie Matsliah, Jakob Nordström, and Stanislav Zivny. Relating proof complexity measures and practical hardness of SAT. In Proceedings of the 18th International Conference on Principles and Practice of Constraint Programming (CP 2012), Lecture Notes in Computer Science, pages 316–331. Springer Berlin Heidelberg, 2012.
- Mikael Johnson and Sampsa Hyysalo. Lessons for participatory designers of social media: longterm user involvement strategies in industry. In Kim Halskov, Heike Winschiers-Theophilus, Yanki Lee, Jesper Simonsen, and Keld Bødker, editors, Proceedings of the 12th Participatory Design Conference, page 80, New York, NY, USA, 2012. Association for Computing Machinery.
- Melih Kandemir and Samuel Kaski. Learning relevance from natural eye movements in pervasive interfaces. In Louis-Philippe Morency and Dan Bohus, editors, Proceedings of the International Conference on Multimodal Interaction, pages 85–82, New York, 2012. ACM.
- Melih Kandemir, Arto Klami, Akos Vetek, and Samuel Kaski. Unsupervised inference of auditory attention from biosensors. In Peter Flach, Tijn Bie, and Nello Cristianini, editors, Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), pages 403–418, Heidelberg, September 2012. Springer.
- Ossi Karkulahti and Jussi Kangasharju. Surveying wikipedia activity: Collaboration, commercialism, and culture. In Proceedings of the 2012 International Conference on Information Networking (ICOIN 2012), pages 384–389, 2012.
- Michael Karl, Tatiana Polishchuk, Thorsten Herfet, and Andrei Gurtov. Mediating multimedia traffic with strict delivery constraints. In IEEE International Symposium on Multimedia 2012 (ISM 2012), USA, 2012.
- Petteri Kaski, Mikko Koivisto, and Janne Henrik Korhonen. Fast monotone summation over disjoint sets. In Proceedings of the 7th International Symposium on Parameterized and Exact Computation (IPEC 2012), Lecture Notes in Computer Science, pages 159–170. Springer Berlin Heidelberg, 2012.
- Petteri Kaski, Mikko Koivisto, and Jesper Nederlof. Homomorphic hashing for sparse coefficient extraction. In Proceedings of the 7th International Symposium on Parameterized and Exact Computation (IPEC 2012), Lecture Notes in Computer Science, pages 147–158. Springer Berlin Heidelberg, 2012.
- Jofish Kaye, Matti Nelimarkka, Riitta Kauppinen, Sini Vartiainen, and Pekka Isosomppi. Mobile family interaction: how to use mobile technology to bring trust, safety and wellbeing into families. In 13th International Conference on Human Computer Interaction with Mobile Devices and Services, pages 721–724, 2012.
- Roland Kindermann, Tommi Junttila, and Ilkka Niemelä. Beyond lassos: Complete SMT-based bounded model checking for timed automata. In Holger Giese and Grigore Rosu, editors, Formal Techniques for Distributed Systems, pages 84–100. Springer, June 2012.
- Roland Kindermann, Tommi Junttila, and Ilkka Niemelä. SMT-based induction methods for timed systems. In Marcin Jurdzinski and Dejan Nickovic, editors, Formal Modeling and Analysis of Timed Systems, pages 171–187. Springer, September 2012.

- Mikkel Baun Kjaergaard, and Petteri Nurmi. Challenges for Social Sensing using WiFi signals. In Proceedings of the 1st ACM Workshop on Computational Social Science (in conjunction with MobiSys), 2012.
- Arto Klami. Variational Bayesian matching. In Steven C.H. Hoi and Wray Buntine, editors, Proceedings of 4th Asian Conference on Machine Learning (ACML), pages 205–220. JMLR, 2012.
- Miika Komu, Mohit Sethi, Ramasivakarthik Mallavarapu, Heikki Oirola, Rasib Khan, and Sasu Tarkoma. Secure networking for virtual machines in the cloud. In Proceedings of 2012 IEEE International Conference on Cluster Computing Workshops (Cluster Workshops 2012), pages 88–96, 2012.
- Miika Komu, Samu Varjonen, Andrei Gurtov, and Sasu Tarkoma. Sockets and beyond: Assessing the source code of network applications. In Proceedings of the Ottawa Linux Symposium, pages 7–24, Ottawa, Canada, July 2012.
- Yury Korolev, Dmitry Korzun, and Ivan Galov. Smart space applications integration: A mediation formalism and design for Smart-M3. In Sergey Andreev, Sergey Balandin, and Yevgeni Koucheryavy, editors, Internet of Things, Smart Spaces, and Next Generation Networking. Lecture Notes in Computer Science, Volume 7469, 2012, pages 128–139, Berlin Heidelberg, 2012. Springer.
- Dmitry Korzun, Ivan Galov, and Sergey Balandin. Proactive personalized mobile multi-blogging service on Smart-M3. In Proc. 34th International Conference on Information Technology Interfaces (ITI 2012), pages 143–148, Croatia, June 2012.
- Dmitry Korzun and Rustam Kadirov. Sensors in a smart room: Preliminary study. In Sergey Balandin and Andrei Ovchinnikov, editors, Proc. 12th Conference of Open Innovations Association FRUCT, pages 37–42, State University of Aerospace Instrumentation (SUAI), November 2012. FRUCT.
- Dmitriy Kuptsov, Boris Nechaev, and Andrei Gurtov. Demand-aware flow allocation in data center networks. In Capacity Sharing Workshop, Nice, France, 2012. ACM.
- Miko Laakso and Lassi A. Liikkanen. Dubious role of formal creativity techniques in professional design. In International Conference on Design Creativity (ICDC), pages 1–8, 2012.
- Tero Laitinen, Tommi Junttila, and Ilkka Niemelä. Classifying and propagating parity constraints. In Michela Milano, editor, Principles and Practice of Constraint Programming - CP 2012, pages 357–372. Springer, October 2012.
- Tero Laitinen, Tommi Junttila, and Ilkka Niemelä. Conflict-driven XOR-clause learning. In Alessandro Cimatti and Roberto Sebastiani, editors, Theory and Applications of Satisfiability Testing - SAT 2012, pages 383–396. Springer, June 2012.
- Laura A Langohr and Hannu Toivonen. A model for mining relevant and non-redundant information. In Proceedings of the 27th ACM Symposium On Applied Computing (SAC'12), pages 132–137, 2012.
- Laura A Langohr and Hannu Toivonen. Retrieval of relevant and non-redundant nodes. In Proceedings of the First SDM Workshop on Dynamic Network Analysis, in conjunction with the Twelfth SIAM International Conference on Data Mining, pages 32–40, 2012.
- Giovanna J. Lavado, Giovanni Pighizzini, and Shinnosuke Seki. Converting nondeterministic automata and context-free grammars into Parikh equivalent deterministic automata. In Proceedings of the 16th International Conference on Developments in Language Theory (DLT 2012), pages 284–295. Springer, 2012.
- Ville Lehtinen, Antti Nurminen, and Antti Oulasvirta. Integrating spatial sensing to an interactive mobile 3D map. In Mark Billinghurst, Joseph LaViola, and Anatole Lecuyer, editors, 2012 IEEE Symposium on 3D User Interfaces (3DUI), pages 11–14, Danvers, MA, March 2012. IEEE.
- Ville Lehtinen, Antti Oulasvirta, Antti Salovaara, and Petteri Nurmi. Dynamic tactile guidance for visual search tasks. In Proceedings of the ACM Symposium on User Interface Software and Technology (UIST 2012), pages 445–452, New York, NY, USA, October 2012. ACM Press.

- Vilma Lehtinen and Lassi Liikkanen. Meanings of mobile music sharing in tween life. In *Proceeding CHI EA '12 Extended Abstracts on Human Factors in Computing Systems*, pages 1907–1912, May 2012.
- Lassi A. Liikkanen. From characterization to understanding involuntary musical imagery. In *The joint 12th International Conference on Music Perception and Cognition (ICMPC) and 8th Triennial Conference of the European Society for the Cognitive Sciences of Music ICMPC- ESCOM, 2012*.
- Lassi A. Liikkanen. Love through the viewfinder: Practices in contemporary snapshot photography of live music performances. In *Helsinki PhotoMedia*, pages 1–10, 2012.
- Lassi A. Liikkanen, Christopher Amos, Sally Jo Cunningham, Downie J. Stephen, and David McDonald. Music interaction research in HCI. In *ACM Conference on Human Factors in Computing Systems conference (SIGCHI)*, pages 1119–1122, 2012.
- Lassi A. Liikkanen and Miko Laakso. Concept design as knowledge construction — the case of user-centered design. In *12th International Design Conference DESIGN*, pages 1341–1350, 2012.
- Jefrey Lijffijt, Panagiotis Papapetrou, and Kai Puolamäki. Size matters: Finding the most informative set of window lengths. In Peter A. Flach, Tijl De Bie, and Nello Cristianini, editors, *Machine Learning and Knowledge Discovery in Databases*, pages 451–466. Springer Berlin Heidelberg, September 2012.
- Jefrey Lijffijt, Tanja Säily, and Terttu Nevalainen. Ceecing the baseline: Lexical stability and significant change in a historical corpus. In Jukka Tyrkkö, Matti Kilpiö, Terttu Nevalainen, and Matti Rissanen, editors, *Outposts of Historical Corpus Linguistics: From the Helsinki Corpus to a Proliferation of Resources*. Research Unit for Variation, Contacts and Change in English, Helsinki, September 2012.
- Guohua Liu, Tomi Janhunen, and Ilkka Niemelä. Answer set programming via mixed integer programming. In *Principles of Knowledge Representation and Reasoning*, pages 32–42, June 2012.
- Zhifa Liu, Brandon Malone, and Changhe Yuan. Empirical evaluation of scoring functions for Bayesian network model selection. In *Proceedings of the Ninth Annual MCBIOS Conference: Dealing with the Omics Data Deluge*, 2012.
- Panu Luosto, Ciprian Doru Giurcaneanu, and Petri Kontkanen. Construction of irregular histograms by penalized maximum likelihood: a comparative study. In *Proceedings of the IEEE Information Theory Workshop*, 2012.
- Brandon Malone, and Changhe Yuan. A Bounded Error, Anytime Parallel Algorithm for Exact Bayesian Network Structure Learning. In *Proceedings of the 6th European Workshop on Probabilistic Graphical Models (PGM-2012)*, 2012.
- Petri Mannonen and Sampo Teräs. Technology cultures and user experience ecosystems - usercentered view towards user-technology relationship. In *Humans and Technology Relationship workshop at DRS 2012*, page 1, July 2012.
- Sergey Marchenkov, Pavel Vanag, and Dmitry G. Korzun. Evaluation of the Smart Space Approach in Mobile Data Processing. In *Proceeding of the 11th Conference Open Innovations Association FRUCT*, pp.194-195, 2012.
- David McGookin, Yolanda Vazquez-Alvarez, Joanna Bergström-Lehtovirta, and Stephen Brewster. Shaking the dead: Multimodal location based experiences for un-stewarded archaeological sites. In *Proceedings of the 7th Nordic Conference on Human-Computer Interaction: Making Sense Through Design*, pages 199–208. ACM New York, NY, USA, October 2012.
- Julien Mineraud, Sasitharan Balasubramaniam, Jussi Kangasharju, and William Donnelly. FsPGBR: a scalable and delay sensitive cloud routing protocol. In *Proceedings of the ACM SIGCOMM 2012 conference on Applications, technologies, architectures, and protocols for computer communication (SIGCOMM'12)*, pages 301–302, 2012.
- Abdulmelik Mohammed, Daniel Pletea, and Eugen Czeizler. Computational modelling of the kinetic tile assembly model using a rule-based approach. In *DNA Computing and Molecular Programming - 18th International Conference, DNA 18. Abstracts of Talks and Posters*, page 36, August 2012.

- Matti Nelimarkka and Juuso Karikoski. Categorizing and measuring social ties. In RC33 Eighth International Conference on Social Science Methodology. Sydney, July 2012.
- Teppo Niinimäki and Pekka Parviainen. Local structure discovery in Bayesian networks. In Proceedings of the Twenty-Eighth Conference Conference on Uncertainty in Artificial Intelligence (UAI-12), pages 634–643, 2012.
- Ilya Nikolaevskiy, Dmitry Korzun, and Andrei Gurtov. Securing interactions of smart objects in Smart-M3 spaces. In Sergey Balandin and Andrei Ovchinnikov, editors, Proceedings of 12th Conference of Open Innovations Association FRUCT. SUAI, November 2012.
- Adam J. Oliner, Anand Iyer, Eemil Lagerspetz, Sasu Tarkoma, and Ion Stoica. Collaborative energy debugging for mobile devices. In Proceedings of the Eighth USENIX conference on Hot Topics in System Dependability, pages 6–6, 2012.
- Jörg Ott and Jussi Kangasharju. Opportunistic content sharing applications. In Proceedings of the 1st ACM workshop on Emerging Name-Oriented Mobile Networking Design - Architecture, Algorithms, and Applications (NoM'12), pages 19–24, 2012.
- Antti Oulasvirta, Aurora Pihlajamaa, Jukka Petteri Perkiö, Debarshi Ray, Taneli Vähäkangas, Tero Hasu, Niklas Vainio, and Petri Myllymäki. Long-term effects of ubiquitous surveillance in the home. In Proceedings of the 14th International Conference on Ubiquitous Computing (Ubicomp 2012), pages 41–50, 2012.
- Jaakko Peltonen and Konstantinos Georgatzis. Efficient optimization for data visualization as an information retrieval task. In Ignacio Santamaría, Jerónimo Arenas-García, Gustavo Camps-Valls, Deniz Erdogmus, Fernando Pérez-Cruz, and Jan Larsen, editors, Proceedings of MLSP 2012, the 2012 IEEE International Workshop on Machine Learning for Signal Processing, Piscataway, 2012. IEEE.
- Mikko Pervilä, Mikko Rantanen, and Jussi Kangasharju. Implementation and evaluation of a wired data center sensor network. In Proceedings of the First International Workshop on Energy Efficient Data Centers (E2DC 2012), Lecture Notes in Computer Science, pages 105–116. Springer Berlin Heidelberg, 2012.
- Tatiana Polishchuk, Michael Karl, Thorsten Herfet, and Andrei Gurtov. Scalable architecture for multimedia multicast internet applications. In 13th IEEE International Symposium on a World of Wireless, pages 1–6, 2012.
- Teemu Pulkkinen and Petteri Nurmi. AWESOM: Automatic discrete partitioning of indoor spaces for WiFi fingerprinting. In Proceedings of the 10th International Conference on Pervasive Computing (Pervasive 2012), Lecture Notes in Computer Science, pages 271–288. Springer Berlin Heidelberg, 2012.
- Kui Qian, Antonio Di Lieto, Jukka Corander, Petri Auvinen, and Dario Greco. Re-analysis of Bipolar Disorder and Schizophrenia Gene Expression Complements the Kraepelinian Dichotomy, volume 736, pages 563–577. Springer, 2012.
- Weixiong Rao, Lei Chen, Pan Hui, and Sasu Tarkoma. Move: A large scale keyword-based content filtering and dissemination system. In Proceedings of 2012 IEEE 32nd International Conference on Distributed Computing Systems (ICDCS 2012), pages 445–454, 2012.
- Weixiong Rao, Kai Zhao, Eemil Lagerspetz, Pan Hui, and Sasu Tarkoma. Energy-aware keyword search on mobile phones. In Proceedings of the first edition of the MCC workshop on Mobile cloud computing (MCC'12), pages 59–64, 2012.
- Weixiong Rao, Kai Zhao, Yan Zhans, Pan Hui, and Sasu Tarkoma. Maximizing timely content advertising in DTNs. In Proceedings of the 9th Annual IEEE Communications Society Conference on Sensor, Mesh and Ad Hoc Communications and Networks (SECON 2012), pages 254–262, 2012.
- Tuukka Ruotsalo. Domain specific data retrieval on the semantic web. In E. Simperl, P. Cimiano, A. Polleres, O. Corcho, and V. (Eds.) Presutti, editors, The Semantic Web: Research and Applications - 9th Extended Semantic Web Conference. Lecture Notes in Computer Science 7295., pages 422–436. Springer, 2012.

- Swaminathan Sankararaman, Karim Abu-Affash, Alon Efrat, Sylvester David Eriksson-Bique, Valentin Polishchuk, Srinivasan Ramasubramanian, and Michael Segal. Optimization schemes for protective jamming. In Proceedings of the Thirteenth ACM International Symposium on Mobile Ad Hoc Networking and Computing (MobiHoc'12), pages 65–74, 2012.
- Hiroaki Sasaki, Michael Gutmann, Hayaru Shouno, and Aapo Hyvärinen. Topographic analysis of correlated components. In JMLR: Workshop and Conference Proceedings 25 of Asian Conference on Machine Learning (MCC'12), pages 1–14, 2012.
- Shinnosuke Seki and Y. Okuno. On the behavior of tile assembly system at high temperatures. In Proceedings of the Turing Centenary Conference - How the World Computes (CiE 2012, Cambridge, United Kingdom, June 18-23, 2012), pages 550–560. Springer, June 2012.
- Maria E. Skarkala, Hannu Toivonen, Pirjo Moen, Manolis Maragoudakis, Stefanos Gritzalis, and Lilian Mitrou. Privacy preservation by k-anonymization of weighted social networks. In Proceedings of IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2012), pages 486–491, 2012.
- Craig Stewart, Eve Hoggan, Laura Haverinen, Hugues Salamin, and Giulio Jacucci. An exploration of inadvertent variations in mobile pressure input. In Proceedings of the 14th international conference on Human-computer interaction with mobile devices and services (MobileHCI'12), pages 35–38, 2012.
- Tatsuya Tashiro, Shohei Shimizu, Aapo Hyvärinen, and Takashi Washio. Estimation of causal orders in a linear non-Gaussian acyclic model: a method robust against latent confounders. In Proceedings of International Conference on Artificial Neural Networks and Machine Learning (ICANN-2012), pages 491–498, 2012.
- Sampo Teräs and Mari Mäkelä. Service design determinants for user value design - online store case study. In OzCHI, 2012.
- Mika Timonen. Categorization of very short documents. In Proceedings of the 4th International Conference on Knowledge Discovery and Information Retrieval (KDIR 2012), pages 5–16, 2012.
- Jukka Toivanen, Hannu Toivonen, Alessandro Valitutti, and Oskar Gross. Corpus-based generation of content and form in poetry. In Proceedings of the Third International Conference on Computational Creativity (ICCC 2012), pages 175–179, 2012.
- Aurora Tulilaulu, Joonas Paalasmaa, Mikko Waris, and Hannu Toivonen. Sleep musicalization: Automatic music composition from sleep measurements. In Proceedings of the 11th International Symposium on Intelligent Data Analysis (IDA 2012), Lecture Notes in Computer Science, pages 392–403. Springer Berlin Heidelberg, 2012.
- Taneli Vähäkangas and Joel Pyykkö. VisciPad: Peeking into a collaborative creative writing project in elementary school. In Proceedings of the 10th International Conference on Creating, Connecting and Collaborating through Computing (C5 2012), pages 37–44, 2012.
- Niko Välimäki. Least random suffix/prefix matches in output-sensitive time. In Proceedings of the 23rd Annual Symposium on Combinatorial Pattern Matching (CPM 2012), Lecture Notes in Computer Science, pages 269–279. Springer Berlin Heidelberg, 2012.
- Niko Välimäki and Simon J. Puglisi. Distributed string mining for high-throughput sequencing data. In Proceedings of the 12th International Workshop on Algorithms in Bioinformatics (WABI 2012), Lecture Notes in Computer Science, pages 441–452. Springer Berlin Heidelberg, 2012.
- Turo Vartiainen and Jeffrey Lijffijt. Pre-modifying participles in the parsed BNC. In Joybrato Mukherjee and Magnus Huber, editors, Corpus Linguistics and Variation in English: Theory and Description, pages 247–258. Rodopi Amsterdam, May 2012.
- Sami Vihavainen, Sujeet Mate, Lassi Liikkanen, and Igor Curcio. Video as memorabilia: User needs for collaborative automatic mobile video production. In The ACM SIGCHI Conference on Human Factors in Computing Systems (CHI2012), pages 651–654, May 2012.

- Seppo Virtanen, Yangqing Jia, Arto Klami, and Trevor Darrell. Factorized multi-modal topic model. In Nando de Freitas and Kevin Murphy, editors, *Proceedings of the Twenty-Eighth Conference on Uncertainty in Artificial Intelligence*, pages 843–851, Corvallis, August 2012. AUAI Press.
- Seppo Virtanen, Arto Klami, Suleiman A. Khan, and Samuel Kaski. Bayesian group factor analysis. In Neil Lawrence and Mark Girolami, editors, *Proceedings of the Fifteenth International Conference on Artificial Intelligence and Statistics*, pages 1269–1277. JMLR, April 2012.
- Aaron Yi Ding, Teemu Savolainen, Jouni Korhonen, and Markku Kojo. Speeding up IPv6 Transition: Discovering NAT64 and Learning Prefix for IPv6 Address Synthesis. In *Proceedings of IEEE International Conference on Communications (IEEE ICC 2012)*, pages 6862–6868, 2012.
- Changhe Yuan and Brandon Michael Malone. An improved admissible heuristic for finding optimal Bayesian networks. In *Proceedings of the 28th Conference of Uncertainty in Artificial Intelligence (UAI 2012)*, pages 2186–2191, 2012.
- Liang Wang and Jussi Kangasharju. Real-world sybil attacks in BitTorrent mainline DHT. In *Proceedings of GLOBECOM 2012: Communication and Information System Security Symposium*, pages 844–850, 2012.
- Dinesh Chamindra Wijekoon, Marta Cecchinato, Eve Hoggan, and Jukka Linjama. Electrostatic modulated friction as tactile feedback: Intensity perception. In *Proceedings of the 2012 international conference on Haptics: perception, devices, mobility, and communication - Volume Part I (EuroHaptics'12)*, pages 613–624, 2012.
- Walter Wong, Liang Wang, and Jussi Kangasharju. Neighborhood search and admission control in cooperative caching networks. In *Proceedings of GLOBECOM 2012: Next Generation Networking and Internet Symposium*, pages 2876–2882, 2012.

D.3. Scientific monographs and edited books

- Adrian Balint, Anton Belov, Daniel Diepold, Simon Gerber, Matti Järvisalo, and Carsten Sinz. *Proceedings of SAT Challenge 2012*, volume B-2012-2 of Department of Computer Science Series of Publications B. University of Helsinki, 2012.
- Steven de Rooij, Wojciech Kotłowski, Jorma Rissanen, Petri Myllymäki, Teemu Roos, and Kenji Yamanishi. *Proceedings of the Fifth Workshop on Information Theoretic Methods in Science and Engineering (WITMSE-2012)*. 2012.
- Thomas Erlebach, Sotiris Nikolettseas, and Pekka Orponen. *Algorithms for Sensor Systems: 7th International Symposium on Algorithms for Sensor Systems, Wireless Ad Hoc Networks and Autonomous Mobile Entities, ALGOSENSORS 2011, Saarbrücken, Germany, September 8-9, 2011, Revised Selected Papers*. Springer, Berlin Heidelberg, 2012.
- Fedor V. Fomin and Petteri Kaski. *Algorithm Theory - SWAT 2012, 13th Scandinavian Symposium and Workshops*, Helsinki, Finland, July 4-6, 2012. *Proceedings*. Springer, Berlin Heidelberg, 2012.
- Jussi Kangasharju and Iurii A. Bogoiavlenskii. *Proceedings of AMICT 2010-2011*. Department of Computer Science Series of Publications B. University of Helsinki, 2012.
- Jaakko Peltonen, Tapani Raiko, and Samuel Kaski. *Neuroinformatics, Special Issue on Machine Learning for Signal Processing 2010*, volume 80. Elsevier, 2012.
- Sasu Tarkoma. *Publish/Subscribe Systems: Design and Principles*. Wiley, 2012
- Jorma Rissanen. *Optimal Estimation of Parameters*. Cambridge University Press, 2012.

D.4. Other publications

- Thomas Binder, Giorgio De Michelis, Pelle Ehn, Giulio Jacucci, Per Linde, and Ina Wagner. What is the object of design? In CHI '12 Extended Abstracts on Human Factors in Computing Systems, pages 21–30. ACM, 2012.
- Ralf Eggeling, Teemu Roos, Petri Myllymäki, and Ivo Grosse. Comparison of NML and Bayesian scoring criteria for learning parsimonious Markov models. In Proceedings of the 5th Workshop on Information Theoretic Methods in Science and Engineering (WITMSE-2012), 2012.
- Lauri Eronen, Petteri Hintsanen, and Hannu Toivonen. Biomine: A network-structured resource of biological entities for link prediction. In Michael R. Berthold, editor, Bisociative Knowledge Discovery, Lecture Notes in Computer Science, pages 364–378. Springer Berlin Heidelberg, 2012.
- Andrei Gurtov, Ilya Nikolaevsky, and Andrey Lukyanenko. Using HIP DEX for key management and access control in smart objects. In Proceedings of Workshop on Smart Object Security, Paris, 23rd March 2012, 2012.
- Teemu Hynönen, Sebastien Jean Mahler, and Hannu Toivonen. Discovery of novel term associations in a document collection. In Michael R. Berthold, editor, Bisociative Knowledge Discovery, Lecture Notes in Artificial Intelligence (LNAI), pages 91–103. 2012.
- Ilpo Järvinen, Binoy Chemmagate, Laila Daniel, Aaron Yi Ding, Markku P I Kojo, and Markus Isomäki. Impact of TCP on interactive real-time communication - position paper. Proceedings of IAB / IRTF Workshop on Congestion Control for Interactive Real-Time Communication, 2012.
- Matti Järvisalo, Daniel Le Berre, Olivier Roussel, and Laurent Simon. The international SAT solver competitions. AI Magazine, 33(1):89–92, 2012.
- Angelika Kimmig, Esther Galbrun, Hannu Toivonen, and Luc De Raedt. Patterns and logic for reasoning with networks. In Michael R. Berthold, editor, Bisociative Knowledge Discovery, Lecture Notes in Artificial Intelligence (LNAI), pages 122–143. 2012.
- Airi Lampinen, Coye Cheshire, and Kai Huotari. Privacy management strategies and online photo sharing: A pilot survey, 2012. Presented at the Reconciling Privacy with Social Media workshop at CSCW 2012, Seattle, USA.
- Laura A Langohr, Vid Podpecan, Marko Petek, Igor Mozetic, and Kristina Gruden. Contrast mining from interesting subgroups. In Michael R. Berthold, editor, Bisociative Knowledge Discovery, Lecture Notes in Artificial Intelligence (LNAI), pages 390–406. 2012.
- Laura A Langohr and Hannu Toivonen. Finding representative nodes in probabilistic graphs. In Michael R. Berthold, editor, Bisociative Knowledge Discovery, Lecture Notes in Artificial Intelligence (LNAI), pages 218–229. 2012.
- Igor Mozetic, Nada Lavrac, Vid Podpecan, Petra Kralj Novak, Helena Motaln, Marko Petek, Kristina Gruden, Hannu Toivonen, and Kimmo Kulovesi. Semantic subgroup discovery and cross-context linking for microarray data analysis. In Michael R. Berthold, editor, Bisociative Knowledge Discovery, Lecture Notes in Artificial Intelligence (LNAI), pages 379–389. 2012.
- Matti Nelimarkka, Nyyti Kinnunen, and Noora Vainio. Ohjelmointia scratchin kanssa, 2012. http://avoinoppikirja.fi/tiedostot/muut/ohjelmointia_scratchin_kanssa.pdf.
- Matti Nelimarkka, Salla-Maaria Laaksonen, Irina Khaldarova, and Janne Matikainen. Analysis of MPs and social media during the 2011 elections in Finland. In Finnish Conference of Communication Research 30-31.08., page xx, 2012.
- Olli Pitkänen. Hyvitysmaksuehdotus on valmiiksi vanhentunut. Helsingin Sanomat, (16.5.2012):6, 2012.
- David Pizzi, Ilkka Kosunen, Cristina Viganó, Anna Maria Polli, Imtiaj Ahmed, Daniele Zanella, Marc Cavazza, Sid Kouider, Jonathan Freeman, Luciano Gamberini, and Giulio Jacucci. Incorporating subliminal perception in synthetic environments. In Proceedings of the 2012 ACM Conference on Ubiquitous Computing, pages 1139–1144. ACM, 2012.

- Teemu Roos, Petri Myllymäki, and Tommi Jaakkola. Editorial: Special issue on the Fifth European Workshop on Probabilistic Graphical Models (PGM-2010). *International Journal of Approximate Reasoning*, 59, 2012.
- Mikhail Shubin. Analysing the course of the A(H1N1) influenza epidemic of 2009-2010 in Finland. In *Proceedings of Bioinformatics Research and Education Workshop*, 2012.
- Mikhail Shubin and Sirkka-Liisa Varvio. Analyzing the course of the A(H1N1) influenza epidemic of 2009 in Finland. In *Proceedings of the Theory and Applications of System Analysis (Teorija i Praktika Sistemnogo Analiza)*, pages 62–68, 2012.
- Sakari Tamminen, Eeva Raita, Vilma Lehtinen, Suvi Silfverberg, and Niklas Ravaja. Teknologian sosiaalipsykologinen tutkimus. *Psykologia*, 47(5-6):410–422, 2012.
- Hannu Toivonen. Network analysis: Overview. In Michael R. Berthold, editor, *Bisociative Knowledge Discovery, Lecture Notes in Artificial Intelligence (LNAI)*, pages 144–146. 2012.
- Hannu Toivonen, Fang Zhou, Aleksi Hartikainen, and Atte Einari Hinkka. Network compression by node and edge mergers. In Michael R. Berthold, editor, *Bisociative Knowledge Discovery, Lecture Notes in Artificial Intelligence (LNAI)*, pages 199–217. 2012.
- Alessandro Valitutti. Creative coding for humor design: A preliminary exploration. *Proceedings of the 3rd International Workshop on Computational Humor*, 2012.
- Alessandro Valitutti, Hannu Toivonen, Oskar Gross, and Jukka Toivanen. Decomposition and distribution of humorous effect in interactive systems. *Proceedings of 2012 AAAI Fall Symposium Series: Artificial Intelligence of Humor*, pages 96–100, 2012.
- Perttu Virtanen. Football Dataco v Yahoo! - tietokannat ja tekijänoikeus ovat uhkapeliä. *IPRinfo*, 2012(5):24–27, 2012.
- Perttu Virtanen. Online privacy in China. *IPRinfo*, 2012(1), 2012.
- Perttu Virtanen. Software, patentability criteria and enforcement: PatLim. *IPRinfo*, 2012(2):14–15, 2012.
- Fang Zhou, Sebastien Jean Mahler, and Hannu Toivonen. Review of BisoNet abstraction techniques. In Michael R. Berthold, editor, *Bisociative Knowledge Discovery, Lecture Notes in Artificial Intelligence (LNAI)*, pages 166–178. 2012.
- Fang Zhou, Sebastien Jean Mahler, and Hannu Toivonen. Simplification of networks by edge pruning. In Michael R. Berthold, editor, *Bisociative Knowledge Discovery, Lecture Notes in Artificial Intelligence (LNAI)*, pages 179–198. 2012.
- Pavel I. Vanag, and Dmitry G. Korzun. SmartSlog knowledge patterns: initial experimental performance evaluation. In *Proceeding of the 11th Conference Open Innovations Association FRUCT*, pp.176-180, 2012.
- Andrey S. Vdovenko, and Dmitry G. Korzun. Access to Smart Room Service Set from End-user Mobile Devices. In *Proceeding of the 12th Conference Open Innovations Framework Program FRUCT*, pp.300-302, 2012.

D.5. Computer programs and algorithms

Matti Nelimarkka. Chat evolved, 2012.

Matti Nelimarkka. Push notifications to WinJS, 2012.

Samu Varjonen. Implementation of Y.1731 for Linux, 2012.

(Here reporting is clearly not perfect; HIIT researchers publish much more software.)

D.6. Doctoral dissertations by HIIT researcher

- Lauri Ahlroth. Online Algorithms in Resource Management and Constraint Satisfaction. Aalto University School of Science, Espoo, Finland, 2012.
- Asko Lehmuskallio. Pictorial practices in a cam era. Studying non-professional camera use. PhD thesis, School of Communication, Media and Theatre, University of Tampere, 2012.
- Pekka Parviainen. Algorithms for Exact Structure Discovery in Bayesian Networks. PhD thesis, Series of Publications A, Department of Computer Science, University of Helsinki, 2012.
- Antti Salovaara. Repurposive appropriation and creative technology use in human-computer interaction. PhD thesis, Faculty of Behavioral Sciences, University of Helsinki, 2012.
- Jouni Sirén. Compressed Full-Text Indexes for Highly Repetitive Collections. PhD thesis, Series of Publications A, Department of Computer Science, University of Helsinki, 2012.
- Jukka Sirén. Statistical models for inferring the structure and history of populations from genetic data. PhD thesis, Department of Mathematics and Statistics, University of Helsinki, 2012.
- Niko Välimäki. Applications of Compressed Data Structures on Sequences and Structured Data. PhD thesis, Series of Publications A, Department of Computer Science, University of Helsinki, 2012.
- Samu Varjonen. Secure Connectivity With Persistent Identities. PhD thesis, Series of Publications A, Department of Computer Science, University of Helsinki, 2012.
- Jaana Wessman. Mixture Model Clustering in the Analysis of Complex Diseases. PhD thesis, Series of Publications A, Department of Computer Science, University of Helsinki, 2012.
- Fang Zhou. Methods for Network Abstraction. PhD thesis, Series of Publications A, Department of Computer Science, University of Helsinki, 2012.

D.7. Master's Theses by a HIIT researcher or instructed by a HIIT researcher

- Muhammed Al-Hello. Comparative study of tools for dynamical modeling of biological networks. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Ali Amiryousefi. Inductive inference in supervised classification. Master's thesis, Department of Mathematics and Statistics, University of Helsinki, 2012.
- Muhammad Ammad-ud din. Modeling drug response in cancer cells by combining multiple drug and cell line views. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.
- Rijubrata Bhaumik. Power modeling of mobile applications using hardware performance counters. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Daniel Blande. Automatic gene annotation of prokaryotic genomes. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Naveen Davis. Botnet detection by using correlated anomalies. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Sanna Fröblom. Content distribution in opportunistic networks. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Romain Gauriot. Statistical challenges in the quantification of gunshot residue evidence. Master's thesis, Department of Mathematics and Statistics, University of Helsinki, 2012.

- Xin Gu. Host Identity Protocol version 2.5. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Nalin Gupta. Management of decentralized dht based m2m network. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Juan Gutiérrez Cárdenas. Synthetic biology: Design of biological circuits and metric spaces in DNA. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Sami Hallenberg. Palvelunestohyökkäykset langattomissa verkoissa. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Visa Hankala. Evaluating the usage of internet address blocks through ICMP probes. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Juho Hirvonen. Distributed Edge Packing. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Anisul Huq. Experimental implementation of a compact routing based mapping system for the Locator/ID Separation Protocol (lisp). Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Taru Itäpelto. Monikätkäinen rosvo -ongelman optimointialgoritmit. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Dapeng Jiao. Log analyzer for mobility management entity. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Noora Joensuu. Aviqa: a VoIP softphone for analyzing speech and video quality. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Olli Jokinen. Keskitetty tunnistautumispalvelu web-sovellusarkkitehtuureissa. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Juho Kalliomäki. Virtualisointi yrityskäytössä. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Juho-Kustaa Kangas. Yhtenäisten joukkojen määrä rajoitetun asteen verkoissa. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Serikzhan Kazi. Prefix-sorted automaton: construction, determinization and distributed path sorting. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Andrew Keating. Models for the simulation of a name-based interdomain routing architecture. Master's thesis, Department of Computer Science and Engineering, Espoo, 2012.
- Kimmo Kekkonen. User-centric new service development in telecom industry. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Eetu Korhonen. Advanced evasion techniques: Measuring the threat detection capabilities of up-to-date network security devices. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Pasi Korhonen. Learning sequence-function relationships. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Ilkka Kosunen. Clustering psychophysiological data with mixtures of generalized linear models. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Poojitha Kota Venkata. Analysis and validation of exome sequencing technology for identifying cancer predisposing events. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Jesse Lankila. Popularity in user generated content. Master's thesis, Department of Computer Science, University of Helsinki, 2012.

- Jia Li. Towards high performance BitTorrent. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Yi Liao. Securing a publish/subscribe network architecture with packet level authentication. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Henning Lübbers. Effects of dynamic parameter discovery on lossless compression algorithms. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Ramasivakarhik Mallavarapu. Dynamic resource provisioning in IaaS cloud environment. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Marco Manzi. User-driven, content-based, automated advertising via social network integration. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Andre Medeiros de Souza. HAcid: A lightweight transaction system for HBase. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.
- Pekka Mikkola. Burrows-Wheeler-tiivistyksen kiihdyttäminen kielioppitiivistyksillä. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- David Murphy. Mobile devices as platforms for sensor based augmented reality, feasibility and utility. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.
- Tommi Mäkelä. Green cloud computing: Possibilities and restrictions. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Kranthi Nallamothu. Decoding of dynamic visual scenes from gaze features. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.
- Antti Nevanlinna. Biologisten verkkojen vertaileminen ja toistuvien motiivien löytäminen. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Huy Ngu. Web applications - new mobile service paradigm. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Chi Nguyen. Preferential optimization of university students' timetables. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.
- Reeta Oad. Social networking and privacy management: A study of Facebook & LinkedIn. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Swaminathan Rajaraman. Optimization of LTE UE gateway for uplink video transmission. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.
- Mark Sevalnev. Applying queueing theory to computing cluster energy optimization. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.
- Huibin Shen. Molecular fingerprint detection and molecule identification through MS/MS spectra kernels. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Jamshed Siddigi. File transfer to multiple end users in IP multimedia subsystem networks. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Pauli Sinivuori. Luottamus muuntuvassa palvelunestohyökkäysten torjuntajärjestelmässä. Master's thesis, Department of Computer Science, University of Helsinki, 2012.
- Tao Sun. Parameter selection in translation-based approaches to answer set solving. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.
- Tuomo Tilli. Content monitoring in BitTorrent systems. Master's thesis, Department of Computer Science, University of Helsinki, 2012.

Karolis Uziela. Making microarray and RNA-seq gene expression data comparable. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.

Tommi Vatanen. Missing value imputation using subspace methods with applications on survey data. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.

Jiang Xu. Modelling dynamics of influenza with antigenic change. Master's thesis, Department of Information and Computer Science, Aalto University, 2012.

Chao Yan. Genome-based repositioning of commonly used drugs integrating multi-layer information. Master's thesis, Department of Mathematics and Statistics, University of Helsinki, 2012.

Hao Zhuang. Performance evaluation of virtualization in cloud data center. Master's thesis, Department of Computer Science and Engineering, Aalto University, 2012.