

# Future Internet Graduate School Call for Applications 2011

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The Future Internet Graduate School (FIGS) is a doctoral programme funded by the Academy of Finland for the period 1.1.2010-31.12.2013. It is a joint venture of Aalto University, University of Helsinki, and Tampere University of Technology. The Director of FIGS is professor Martti Mäntylä from Aalto University.

In the first Call in 2009, about half of the funded doctoral student positions of FIGS were filled. In this call, all remaining positions are open to applications. In addition, students whose studies are supported by some other funding can apply to an unfunded position.

## Scope of FIGS

During the last 20 years, Internet has grown phenomenally from a modest network providing connectivity between computer laboratories to a global network reaching over 1 billion users. The growth is expected to continue, with most of the next billion users accessing the Net wirelessly. At the same time, the characteristics that originally propelled the Internet to its steep ascent, namely its openness to new innovations and its reliance on the so-called end-to-end principle are becoming its major weaknesses. Unwanted traffic such as viruses, denial-of-service attacks, and identity theft are signs of the stress. The tussles between content owners and IT companies give another alarm of the need to re-engineer the Net to match its scale and use patterns.

The technical research challenges posed are immense because of the scale of the Net and its content. However, what gives Future Internet research its intellectual depth is its multi-disciplinary nature, including economical, social, legal, and behavioural issues delineating Net's acceptability and use. For instance, unwanted traffic is fundamentally an economical problem: sending traffic to any address is simple and cheap, whereas protecting oneself from unwanted traffic is complex and expensive.

The challenge of Future Internet research has been recognised worldwide. In Finland, Future Internet is one of the four programmes in the Strategic Centre of Excellence in Science, Technology and Innovation in ICT (ICT SHOK), combining the coordinated efforts of leading industrial companies with top academic research groups. In European research, it is a major part of the FP7 and FP8 programmes, in particular through the Future Internet PPP initiative, and also in the EIT ICT Labs KIC.

The Future Internet Graduate School complements this effort by educating scientists who can contribute to Future Internet research based on deep technical competence combined with equally deep understanding of the socio-economical issues. Thus, we aim to recruit not only engineers, but also economists, social scientists, behavioural scientists, and designers. An essential goal of the programme is for all students to be able to understand each other's work and comment critically on it, despite their basic education.

## Application Categories

FIGS has a total of ten **funded positions** for doctoral students, of which about half were filled in the first Call of Applications in 2009. In this Call, all remaining positions are open for applications. The employers of students selected to these positions will receive partial funding for the salary of the doctoral student.

Unfunded **adjunct positions** are also available and entitle the student to participate in FIGS activities. Students with already guaranteed funding (holding a research position or employed by relevant university research projects) are encouraged to apply for an adjunct position. Applicants in industry are also eligible if they can demonstrate their employer's commitment to funding post-graduate studies and doctoral research.

## Eligibility

The applicants are expected to have a Master or Licentiate degree and demonstrated interest in scientific research and the work of a researcher. The applicants, if accepted, are expected to engage themselves in full-time research aiming at a doctoral degree in maximum of four years. They are also expected to participate in the events organized by the graduate school and report periodically on their progress to the school.

Applicants are required to have good skills in the Finnish or in the English language. Native speakers of either of these languages do not need to furnish proof of their skill. Non-native English speakers must include the result of an international test result (for example TOEFL) in their application to demonstrate sufficient skill in the English language. The exact requirements on the test scores depend on the university where the student will be admitted.

## Location

The positions are located in the premises of the participating units: Helsinki Institute for Information Technology (Aalto University and University of Helsinki), Department of Communications and Networking (Aalto), Department of Computer Science and Engineering (Aalto), Department of Computer Science (UH) or Department of Communications Engineering (Tampere University of Technology).

Students accepted to funded positions will receive an initial contract in one of the participating units for no more than two years with extension by two more years based on evaluation of the progress of student's progress. Student salaries are determined on the basis of the salary systems used by the employer; at present, all universities use the VPJ system.

## Application Procedure

This Call of Applications will open on xx.10.2010 and close on 31.10.2010.

Applications must be submitted electronically and include the following parts:

- a filled-in application form (<http://www.cis.hut.fi/ella/figs-call-form.html>)
- a PhD studies portfolio in one pdf file submitted through the EasyChair system (<http://www.easychair.org/conferences/?conf=figs2010>, see description in FAQ), including
  - a letter of introduction
  - a curriculum vitae
  - relevant diplomas
  - transcripts of studies
  - an English language certificate
  - a research and study plan for the whole period of PhD studies including a financing plan
  - a publication list with contribution explanations
  - copies of at most three publications

In addition, at most two senior researchers who know the applicant well must submit a recommendation form (<http://www.cis.hut.fi/ella/figs-recommendation-form.html>). Applicants from Aalto University, University of Helsinki, or Tampere University of Technology who have established contact with the intended supervisor of their PhD studies should ask the supervisor (and possible instructor) to submit one recommendation. All other applicants should ask recommendations from senior researchers from their home institution.

Based on the applications, the Board of FIGS can invite promising applicants to give a presentation and a short interview. Applications will not be returned.

Please see the FIGS web site <http://figs.hiit.fi> and the especially the application FAQ therein for more detailed information on the application procedure.

## Evaluation Criteria

The research plan is the most important application document. It should contribute to the intended research field of FIGS and match well the domain of the intended site of research. The scientific, economic, and societal impacts of the potential results are additional evaluation criteria. The research plan will be further evaluated regarding its feasibility. Does the application demonstrate that the needed tools and skills are available or can be acquired? The feasibility of the funding plan for adjunct positions is another important criterion. Does it provide sufficient support for full-time studies and research?

The other documents have a supportive role in the evaluation. The information on the merits and performance of the applicant in scientific work and studies are used to estimate whether the applicant has the capacity for the proposed project. The statement of the supervisor and other referees serve a similar function. The evaluators will be asking themselves whether the applicant's background and current situation will allow full-time effort on the thesis work.

The evaluation is competitive. FIGS supports only the top candidates. In the calls for funded positions all applications are compared to each other. When applications for

adjunct positions are evaluated, they will be compared to recent applications. Consideration will be also given to ensuring that the selection process results in a cohesive multi-disciplinary research community in FIGS.

The evaluation process makes use of an evaluation form, with numerical grades for various aspects relevant for decision-making. However, the numerical grades are auxiliary tools only; the decisions will be made on the basis of a more holistic assessment of the applicants.

## Evaluation Procedure

The applications will be read and evaluated by at least three members of the FIGS board. The evaluators will present their overall recommendation in a board meeting. If necessary, the board will have an extended discussion and, if consensus is not reached, vote on the decision. FIGS board may also invite promising applicants to an interview; in this case, FIGS will cover the travel costs of the applicants.

A form that documents the arguments that the decision is based on will be filled in the board meeting for each applicant. These data are also attached to the decision that is delivered to the applicant after the meeting to provide feedback on the application.