

PhD Student Recruitment

**Telecommunication Software and Systems
Group,
Waterford Institute of Technology,
Ireland**

August 2009



TSSG
www.tssg.org



The **Telecommunications Software & Systems Group (TSSG)**, <http://www.tssg.org>, at the **Waterford Institute of Technology (WIT)** is the largest research centre in the Information and Communications Technologies (ICT) domain in Ireland. The TSSG has brought in €55Million in funding since its foundation in 1996, and has approximately 150 staff and students currently working on 35 research projects. The international team of researchers address research challenges in areas such as autonomic network management, service-oriented architecture, service frameworks for 3G/LTE and beyond networks, and Pervasive Computing.



TSSG Building, Waterford Institute of Technology

TSSG is currently seeking a PhD research student to work on a funded project called **Biologically inspired framework supporting network management for the Future Internet**. The project is funded by Science Foundation Ireland (SFI), and will fund the PhD student from October 2009 – September 2013. The project seeks to develop novel methodologies, processes and algorithms to support communication networks of the Future Internet. The Future Internet will face a very dynamic environment, and this is due to advance developments in various technologies surrounding the Internet, including: network access technologies (e.g. WiFi, WiMAX), end user devices (e.g. PDA, laptops), and increase number of services (e.g. HDTV, VoIP). These developments have led to increase access and usage of the Internet, which in turn will require communication networks of the future to be more adaptive, robust, efficient and scalable. One promising area of research that can meet this vision is Biologically inspired (Bio-inspired) autonomic networks – which seek to exploit models from biological systems and apply them to communication networks. In recent years, a number of disciplines have employed biologically inspired techniques to assist in problem solving (e.g. Genetic Algorithms for optimization), and have shown the benefits and success of such techniques.

Prospective students, who are interested in this position, should hold at minimum a Bachelors degree in Mathematics, Electrical and Electronic Engineering or Computer Science with 1st class honours (or equivalent). The successful candidate should also have the following requirements:

- Working and practical knowledge of network management
- Strong mathematical background (Algorithm design and analysis, optimisation techniques, numerical analysis)
- Good programming skills (Java or C++)
- Familiarity with network simulation tools (e.g. OPNET, OMNET, or ns2)
- Familiarity with concepts of traffic engineering would be an advantage, but is not a requirement
- Special interests in understanding biological systems and development of bio-inspired models

Successful candidates will have the responsibility of generating high quality research output resulting in publications in top-level journal and conference proceedings. Interested candidates who wish to apply may submit their latest CV to sasib@tssg.org, where the CV should include:

- Academic transcripts from Bachelors degree (or masters degree) including abstract of thesis dissertation
- Full list of publications, if any
- Full description of past work experience
- Names and contacts of three academic referees

If you would like further information about the project, the role, the TSSG, WIT, or living and working in Ireland, please contact:

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