

GUNNAR KARLSSON

WORK EXPERIENCE

Professor (tenured), from March 1998

School of Electrical Engineering, Royal Institute Technology (Kungl. Tekniska Högskolan, KTH), 10044 Stockholm, Sweden, gk@kth.se, tel. +46 8 7904257.

- Research on quality of service, wireless local area networks, network architecture, delay-tolerant communication; router architecture and lookup of IP addresses.
- Teaching: high-speed networks, introductory queuing theory, and computer networks.
- Member of department steering committee, director of the Laboratory for Communication Networks. Former vice-chair of the Department of Teleinformatics.
- Obtained financing from Ericsson, Telia, Nokia, Vinnova, SSF, VR, EU, and the Wallenberg foundation.
- Member of the faculty board of the university from September of 2000 until April 2003.
- Guest professor at the Computer Engineering and Networks Laboratory, ETH Zurich, Switzerland, from August 2005 until July 2006.

Researcher, full-time from February 1992 to February 1998

Computer and Network Architectures Laboratory, Swedish Institute of Computer Science (SICS).

- Project leader during the establishment of the Stockholm Gigabit Network testbed (1992-1994).
- Contract research for Ericsson Telecom, Telia, and Hewlett-Packard Bristol Research Laboratory.
- Docent at the Department of Teleinformatics, KTH (1993-1998)

Visiting professor, full-time from November 1996 to April 1997

Department of Communication Systems, EPFL, Switzerland.

- First as holder of the EPFL CLUSTER chair.
- Taught a graduate seminar in international master's program.
- Conducted research of adaptive error-control coding for packet-loss recovery.

Visiting professor, full-time from June to December 1997

Department of Computer Science and Engineering, Helsinki University of Technology, Finland.

- Taught two graduate seminars.
- Conducted research on fast address lookup for the Internet Protocol (with S. Nilsson).

Research Staff Member, full-time from January 1989 to January 1992

IBM Zurich Research Laboratory, Switzerland.

- Research on high-speed data switching systems (the PRIZMA chip).

EDUCATION

Executive Program in Infra-Service Management, 2005

KTH Executive School, Sweden.

- Topics: Business logic, industrial dynamics, business strategy, change management, sustainable performance, and international business.

Doctor of Philosophy, from August 1984 to January 1989

Department of Electrical Engineering, Columbia University, USA.

- Thesis: *Subband coding for packet video*. Advisor. Prof. Martin Vetterli.
- Research on layered video coding and multidimensional filter banks.
- Scholarships from the Wallenberg, Blanceflor Boncompagni-Ludovisi née Bildt, and O & E Ericsson foundations.
- Summer intern at Bell Communications Research (now Telcordia Technologies) 1985 and 1986.

Master of Science, from August 1979 to October 1983

School of Electrical Engineering, Chalmers University of Technology, Sweden.

Fulbright advanced undergraduate scholar, from September 1982 to June 1983

Department of Electrical and Computer Engineering, University of Massachusetts, USA.

MISCELLANEOUS INFORMATION

Former students

Tekn. dr. Markus Hidell. Thesis: *Decentralized Modular Router Architectures*, September 2006. Opponent: Prof. Gísli Hjálmtýsson, Reykjavík University, Iceland. Working as researcher at KTH ICT, Kista, Sweden.

Tekn. dr. György Dán. Thesis: *Internet Video Transmission*, February 2006. Opponent: Prof. Jean-Yves LeBoudec, EPFL. Working as post-doc at KTH LCN.

Tekn. dr. Henrik Lundqvist. Thesis: *Error and Traffic Control in High-Speed Networks*, November 2005. Opponent: Prof. Shivkumar Kalyanaraman, Rensselaer Polytechnic Institute. Working at NEC Laboratories, Heidelberg, Germany.

Tekn. dr. Héctor Velayos Muños. Thesis: *Autonomic Wireless Networking*, June 2005. Opponent: Prof. George Polyzos, Athens University of Economics and Business. Working at Jazztel, Madrid, Spain.

Tekn. dr. Thomas Lindh. Graduated April 2004, Thesis: *Performance Monitoring in Communication Networks*. Opponent: Dr. Henk Uiterwaal, RIPE-NCC. Working at KTH Syd, Stockholm, Sweden.

Tekn. dr. Eva Gustafsson. Graduated June 1997. Thesis: *Traffic Dispersion in ATM Networks*. Opponent: Prof. Nicholas F. Maxemchuk, Columbia University. Working at Ericsson AB, Sweden.

Tekn. lic. Evgueni Ossipov. Graduated June 2003. Thesis: *A Simplified Guaranteed Service*. Opponent: Prof. Martin Karsten, University of Waterloo, Canada. Working at Luleå University of Technology, Sweden.

Tekn. ic. Eric C. Lin. Graduated March 1996. Thesis: *The Effects of Scheduling Contention on Workstation Traffic*. Opponent: Prof. Per Gunningberg, Uppsala University, Sweden.

Current students

Tekn. Lic. Ignacio Más Ivars. Thesis: *Probe-based admission control in IP networks*, June 2003. Opponent: Prof. Mats Björkman, Mälardalens högskola, Sweden.

Tekn. Lic. Ian Marsh. Thesis: *Quality aspects of audio communication*, June 2003. Opponent: Prof. Georg Carle, Eberhard Karls Universität Tübingen, Germany.

Tekn. Lic. Jing Fu. Thesis: *Design and Evaluation of Network Processor Systems and Forwarding Applications*, December 2006. Opponent: Prof. Tilman Wolf, University of Massachusetts at Amherst, USA.

M. Sc. Georgios Koudouridis

M. Sc. Vladimir Vukadinović

M. Sc. Ólafur Ragnar Helgasson

M. Sc. Ilias Chatzidrossos

M. Sc. Alonso Zúñiga

Grading committees at thesis defences

Christer Bohm (KTH 1996), Erik Anderlind (KTH 1997), Olov Schélen (Luleå 1998), Ernst Nordström (Uppsala 1998), Olivier Crochat (EPFL 1998), Xavier Garcia Adanez (EPFL 1998), Erland Almström (KTH 1999), Björn Knutsson (Uppsala 2001), Miguel Berg (KTH 2002), Matthias Unbehauen (KTH 2002), Bob Melander (Uppsala 2003), Stefan Larsson (KTH 2004), Cristoff Martin (KTH 2005), Guillermo Barranetxea (EPFL 2005).

Evaluator of research proposals

Swedish Science Council (Vetenskapsrådet) and the Knowledge Foundation (Stiftelsen för kunskaps- och kompetensutveckling), Sweden; FWF, Austria; IWT, Belgium, and ISF, Israel.

External evaluator

For positions as full professor at Luleå University of Technology, Helsinki University of Technology (three times), Karlstad University, Mälardalens högskola, NTNU and Jönköping University (Xu); for associate professor at University of Oslo (twice), Blekinge Institute of Technology, Luleå University of Technology. Evaluator of project teams 3B in networks and telecommunication at INRIA, France, 2003.

Memberships

IEEE, Senior Member; Communication Society.

ACM, Member; Data Communication (SIGCOMM) and Mobile communication (SIGMOBILE) Special Interest Groups.

Member of editorial boards and technical program committees

- IEEE Journal on Selected Areas in Communication from June 2005.
- Elsevier Computer Networks from December 2004 to March 2007.
- IEEE Infocom 2001, 2002, 2003 and 2008.
- ACM SIGMETRICS 2001.
- International Conference on Network Protocols (ICNP) 2001.
- International Symposium on Performance Evaluation of Computer and Telecommunication Systems (SPECTS) 2000 and 2001.
- International Workshop on Quality of Future Internet Services (QoFIS) 2000, 2001, 2002, 2003 (general chair and program co-chair), 2004.
- Workshop on Autonomic Communication 2004 and 2005.
- The Third IFIP-TC6 Networking Conference 2004 (tutorial co-chair).
- IEEE International Workshop on Quality of Service 2005.
- CoNEXT 2005.
- Co-chair of technical program committee of 5th Intl. Symposium on Modeling and Optimization in Mobile, Ad Hoc, and Wireless Networks (WiOpt), Cyprus, 2007.
- ACM Second Workshop on Challenged Networks (CHANTS 2007).

Research programs

Initiator of research program in Queueing theory and teletraffic theory for the Institut Mittag-Leffler, www.ml.kva.se; the proposal was accepted and the program held in the fall semester 2004. Served on the program committee for the program (chairman Prof. Ingemar Kaj, Uppsala University).

Patents

European Patent EP00492026B1 *Modular buffer memory for packet switched network*, July 26, 1995, with W. Denzel and A. Engbersen (holder: IBM).

Swedish Patent 0000176-8 *Förfarande och anordning för multiplexering av dataflöden*, January 21, 2000.

Publications

Total number of publications: 19 journal papers, one book, one book chapter, and about 60 conference papers.