

## Curriculum Vitae – Professor Harri Ehtamo

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Harri Kalevi Ehtamo (Born: March 8, 1953, Köyliö, Finland)

Professor in Systems Analysis (Optimization Theory with Applications in Engineering and Economics),  
Aalto University School of Science, Department of Mathematics and Systems Analysis.

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### **Academic Degrees:**

1976 Bachelor of Science, in Mathematics, University of Helsinki.

1978 Master of Science, in Theoretical Physics, minor: Mathematics, University of Helsinki.

1980 Licentiate of Philosophy, in Theoretical Physics, University of Helsinki.

1989 Doctor of Science (Technology), D.Sci. (Tech.), in Systems and Operations Research, minor:  
Engineering Physics, Helsinki University of Technology.

### **Research and Academic Positions:**

1977-1980 Teaching Assistant, University of Helsinki, Department of Theoretical Physics.

1980-1983 Research Fellow, University of Helsinki, Research Institute for Theoretical Physics, and  
Department of High Energy Physics.

1983-present Helsinki University of Technology; 2010: Aalto University, Systems Analysis Laboratory:

1983-1987 Teaching Assistant.

1987-1990 Junior Research Fellow of the Academy of Finland.

1989-1998 Assistant Professor in Applied Mathematics.

1995 Appointment: Docent in Applied Mathematics.

1995-1996 Research Fellow in Applied Mathematics.

1988-1994 (altogether 14 months) Acting Associate Professor of Applied Mathematics.

Oct 1996-Dec 1996 Acting Professor in Applied Mathematics.

1997-1998 Acting Associate Professor in Applied Mathematics.

1998-1999 Acting Professor in Systems Analysis.

1999-present Professor in Systems Analysis (Optimization Theory with Applications in Engineering and Economics).

**Military Service:**

June 1980-May 1981. Lieutenant, June 1989.

**Academic Activities:**

Member of the Executive Board: The International Society of Dynamic Games (ISDG), 2000-2008; Secretary, 2000-2006.

Member of Editorial Board: Annals of the International Society of Dynamic Games, 1998-2008.

Founding Member and Editor-in-Chief: ISDG Electronic Newsletter, 1990-2006.

Associate Editor: Optimization Letters, 2011-present.

Publication Peer Review, e.g. for: Automatica; European Journal of Operational Research; European Physical Journal B; IEEE Transactions on Automatic Control; IEEE Systems, Man, and Cybernetics; INFORMS Journal of Transportation Science; INFORMS Journal on Computing; International Game Theory Review; Journal of Economic Dynamics and Control; Journal of Guidance, Control, and Dynamics; Journal of Optimization Theory and Applications; Mathematical Programming; Physical Review E; Safety Science.

Evaluated Project Proposals, e.g. for: Austrian Science Foundation, 2012; European Science Foundation, 2013-15; The Academy of Finland, several times.

Graduate School: Board Member of the National Graduate School in Systems Analysis, Decision Making and Risk Management, 1995-2013.

Evaluation of Proposals for Technology Academy Finland (The Millenium Technology Prize), 2016.

**Examination:**

Member of the Aalto University, School of Science Tenure Track Committee, 1.1.2017-31.12.2019.

Member of the Departmental Tenure Track Committees in Aalto University, School of Science (altogether seven times): Department of Mathematics and Systems Analysis, 2016, 2017, 2018; Department of Computer Science, 2016.

Member of the Degree Programme Committee of Engineering Physics and Mathematics, Aalto University, School of Science, 2010-present.

Professor in Charge: of the Major, Systems and Operations Research, in the Master's Programme in Mathematics and Operations Research, Aalto University, School of Science, 2015-present.

Professor in Charge: of the Major, Systems Sciences, in the Bachelor's Programme in Engineering Physics and Mathematics, Aalto University, School of Science, 2005-present.

### **Funding for Research Projects (since 2006)**

Improving of fire safety of large buildings using fire dynamics simulation together with pedestrian behaviour simulation; FDS\_EVAC. Finnish Funding Agency for Technology and Innovation (TEKES), 2006, 30 000 E. (Total funding 250 000 E, with VTT and University of Helsinki).

New simulation methods in fire safety analysis for large buildings. Academy of Finland 2007-2012, 210 000 E. (Total funding 500 000 E, with Ph.D. Timo Korhonen VTT Building and Transport).

Development of elevator traffic flow forecasting methods; ForeMod. KONE Elevators Ltd, 2007-2008, 180 000 E.

Gathering data, modelling and forecasting of people flow in large buildings; Flowman. KONE Corporation, 2009, 45 000 E.

Cognitive radio economics; CYMBELINE. Nokia Research Centre, 2010-2011, 137 000 E.

Robust optimization in the elevator destination control system. KONE Corp., 2018, 60 000 E.

### **Research Visits**

University of South Australia, Center for Industrial and Applicable Mathematics, Adelaide, Australia, Dec 1999-Jan 2000; University of Nantes, Economics Department, Nantes, France, Jun 2001; Institute National de la Recherche Agronomique (INRA), Centre de Montpellier, Montpellier, France, Apr 2002; Group for Research in Decision Analysis (GERSD), and Centre for Research on Transportation (C.R.T), HEC Montreal, Montreal, Canada, May-Jun 2003.

During these visits I have given some lectures, usually 4x2 hours, for master level- and graduate students about my current research topics; mainly related to optimization, modelling and techniques.

**Degrees Supervised and/or Instructed** (at Helsinki University of Technology, -2009; Aalto University, School of Science, 2010-):

Bachelor's Thesis: over 40; Master's Thesis: over 70; Licentiate's Thesis: 7; Doctoral Dissertation: 11.

Supervised and/or Instructed Doctoral Dissertations: Markku Verkama (1994); Osmo Jauri (1995); Jussi Keppo (1998); Tuomas Raivio (2000); Pirja Heiskanen (2001); Mitri Kitti (2006); Kimmo Berg (2010); Anna Matala (2013); Simo Heliövaara (2014); Juha-Matti Kuusinen (2015); Janne Sorsa (2017).

Active Doctoral Students under my Personal Supervision: M.Sc. Mirko Ruokokoski (estimated qualification 2019-2020); M.Sc. Anton von Schantz (estimated qualification 2020).

### **Publication Profile and Presentations:**

Refereed journal articles: 50, with 2100 citations (since 2014, 700 citations); h-index 26 (Google Scholar Citations). Refereed conference articles: 40. Research reports: 25. Two plenary talks in conferences; session chair and session organizer several times.

Recent Conferences:

INFORMS (The American Operations Research Society) Annual Meeting, Washington, DC, Oct 12-15, 2008. Participation with 3 of my graduate students. Four contributed talks.

INFORMS Annual Meeting, San Diego, CA, Oct 11-14, 2009. Participation with 5 of my doctoral students. Six contributed talks.

INFORMS Annual Meeting, San Francisco, CA, Nov 9-12, 2014. Theme: Bridging Data and Decisions. A session chair, together with a contributed talk.

OR2015, International Conference on Operations Research, Vienna, Austria, Sept 1-4, 2015. Theme: Optimal Decisions and Big Data. An invited talk: "Patient and impatient pedestrians in a spatial game of egress congestion", with my co-authors Simo Heliövaara and Anton von Schantz.

HICSS-50, Hawaii International Conference on System Sciences, Waikoloa, Hawaii, Jan 4-7, 2017. An invited talk: "Twotype multiagent game for egress congestion", with my co-authors Anton von Schantz and Ilmari Pärnänen.

INFORMS Annual Meeting, Phoenix, AZ, Nov 4-7, 2018. A contributed talk: "Optimizing people flow and safety in buildings", with my co-authors Juha-Matti Kuusinen, Janne Sorsa, Marja-Liisa Siikonen, and Henri Hakonen.

### **Teaching**

Taught the 5 credit bachelor level course 'Optimoinnin perusteet' (from 2019 on 'Introduction to optimization') during 1998-2018, altogether 21 times. During this time the course has been taken over 3500 engineering students.

**A Teaching Program in TV.** An actor in a teaching program, Computer English IV. "A Dangerous Chess Mate", Vocabulary of Artificial Intelligence. Feb.-Apr. 1987. Written by: Prof. Heikki Koivo. Program Manager: Claire Kurkimies. Production: Finnish Broadcasting Company.