

CV of Nuutti Hyvönen (May 29, 2025)

Personal details

Nuutti Hermanni Hyvönen, born November 19, 1977. ORCID: 0000-0001-6715-8337

Degrees

- Doctor of Science in Technology, Helsinki University of Technology (mathematics, 6/2004).
- Master of Science, Helsinki University of Technology (mathematics, 12/2000).

Current employment

Full Professor (professori, taso 2), Department of Mathematics and Systems Analysis, Aalto University (7/2017 onwards). Head of Department for 9/2018–12/2025.

Previous work experience

Tenured Associate Professor 12/2012–6/2017. Academy Research Fellow 8/2010–11/2012. Postdoctoral researcher 9/2005–7/2010 during which Visiting Scholar at the Department of Mathematics, University of Washington, Seattle, USA 1/2008–12/2008. Doctoral candidate 1/2000–6/2004. Teaching/research assistant 6/1999–12/2000. All these at the Department of Mathematics and Systems Analysis, Aalto University or its predecessor Institute of Mathematics, Helsinki University of Technology.

Career breaks

Non-military service 8/2004–8/2005

Research funding and grants

- *Flagship of Advanced Mathematics for Sensing, Imaging and Modelling*, Academy of Finland (1/2024–4/2028). Role: One of the five PIs at Aalto University. Funding: 1275000€ for Aalto University (decision 359181).
- *Electrical impedance tomography – a novel method for improved diagnostics of stroke*, Academy of Finland (1/2024–12/2025). Role: PI of the Aalto University Team. Funding: 83776€ (decision 359434). Leader of the consortium: Ville Kolehmainen.
- *New frontiers in Bayesian optimal design for applied inverse problems* (9/2022–8/2026), Academy of Finland. Role: the leader of the consortium and the PI of Aalto University's team. Funding share: 449587€ of the total project funding of 899894€ (decision 348503).
- *Electrical impedance tomography – a novel method for improved diagnostics of stroke* (1/2021–12/2023), Jane and Aatos Erkkö Foundation. Role: PI of the Aalto University team. Funding share: 242871€ of the total project funding of 1328000€. Leader of the consortium: Ville Kolehmainen.
- *Centre of Excellence of Inverse Modelling and Imaging* (1/2018–12/2025), Academy of Finland. Role: one of the two PIs at Aalto University. Personal funding share: 750290€ (decisions 312124, 336789 & 353081).
- *Aalto University's direct funding for the CoE in Inverse Modelling and Imaging* (2018–2024), shared with the other PI at Aalto University i.e. Antti Hannukainen. Total funding: 700000€.
- *Uncertainty quantification in electrical impedance tomography* (9/2013–8/2017), Academy of Finland. Role: PI. Funding: 457423€ (decision 267789).
- *Starting grant of an Associate Professor* (1/2013–12/2015), Aalto University, 150000€.
- *Fine-tuning of a realistic measurement model in electrical impedance tomography* (1/2011–12/2013), Academy of Finland in collaboration with Deutsche

Forschungsgemeinschaft. Role: the PI of the Finnish team (prof. Andreas Rieder was the PI of the German team). Funding for the Finnish team: 205730€ (decision 141044).

- *Inverse problems with incomplete data* (8/2010–11/2012), Academy of Finland, Academy Research Fellow. Funding: 189230€ corresponding to the salary of the first 16 months out of the originally granted 60 months – the rest was declined due to a permanent professorship (decision 135979).
- *Inverse problems with incomplete data* (8/2010–7/2013), Academy of Finland, research costs of Academy Research Fellow. Role: PI. Funding: 216789€ (decision 140998).
- *Diffuse tomography: theory and algorithms* (1/2007–12/2009), Academy of Finland, Postdoctoral Researcher's Project. Role: PI. Funding: 180000€ (decision 115013).

Research output

- Author of 76 publications in peer-reviewed international scientific journals (A1).
- 25 invited talks, 42 invited talks at minisymposia and special sessions

Research supervision and leadership experience

- Mentor of 8 postdocs: Yuya Suzuki (2/2023–8/2026), Joanna Bisch (8/2022–6/2025), Ruma Maity (6/2022–12/2023), Janne Tamminen 2016–2017, Lucas Chesnel 3/2013–8/2014, Jeremi Darde 1/2011–6/2012, Hari M. Varma 10/2010–12/2011, Maia Lesosky 5/2009–8/2010
- Principal supervisor of 10 finalized and 6 ongoing doctoral theses: Otto Seiskari 2013, Lauri Harhanen 2013, Stratos Staboulis 2014, Matti Leinonen 2015, Helle Majader 2016, Lauri Mustonen 2017, Mikael Laaksonen 2018, Valentina Candiani 2021, Topi Kuutela 2023, Juha-Pekka Puska 2024, Pauliina Hirvi, Anton Vavilov, Markus Hirvensalo, Altti Jääskeläinen, Aada Hakula, Vigdis Toresen

Teaching merits

Lecturer of 28 master's level courses and 11 bachelors level courses (5 ECTS each) at the Department of Mathematics and Systems Analysis, Aalto University.

Awards and honours

Finnish Inverse Prize, Finnish Inverse Problems Society, 2003

Other key academic merits

Institutional responsibilities at Aalto University:

- Head of the Department of Mathematics and Systems Analysis (9/2018–12/2025).
- Vice Head of the Department of Mathematics and Systems Analysis (1/2017–9/2018).
- Head of Master's Programme in Mathematics and Operations Research (1/2014–12/2017).
- Responsible professor of the Major in Applied Mathematics in Master's Programme in Mathematics and Operations Research (2014–2023).
- Five times the chair of a Departmental Tenure Track Recruitment Committee at the Department of Mathematics and Systems Analysis; member of four other departmental tenure track recruitment committees.
- Six times the Chair of a Departmental Tenure Review Committee at the Department of Mathematics and Systems Analysis; member of five other departmental tenure or full professor review committees.
- Three times the Chair of a Departmental Lecturer Track Recruitment Committee at the Department of Mathematics and Systems Analysis; member of one other departmental lecturer track recruitment committee.

- Member of the Management Team, School of Science (1/2015 onwards).
- Member of the Education Management Team, School of Science (1/2015–12/2022).
- Member of the Steering Group of the Department of Mathematics and Systems Analysis (1/2014 onwards).
- Member of the Degree Programme Committee of (Engineering Physics,) Mathematics and Operations Research, School of Science (1/2013–1/2024).
- Member of the Degree Programme Committee of Bachelor's Programme in Science and Technology, School of Science (1/2013– 2/2016 & 9/2018–12/2019).
- Member of the Academic Committee for Science, School of Science (1/2022–12/2025).
- Deputy member of the Academic Affairs Committee, Aalto University (1/2018–12/2021).
- Deputy member of the Academic Committee for Science, School of Science (1/2014–12/2021).

Scientific responsibilities:

- Vice Director of the Flagship of Advanced Mathematics for Sensing, Imaging and Modelling (1/2024 onwards)
- Member of the board of the Finnish Centre of Excellence in Inverse Modelling and Imaging (1/2018–12/2025).
- Member of the board of the Finnish Inverse Problems Society (12/2011–12/2021)
- Member of the board of the Finnish Centre of Excellence in Inverse Problems Research (1/2009–12/2017).
- Member of the board of the Graduate School of Inverse Problems (1/2010–12/2013).

Reviewer of funding application & editorial and examination duties:

- Member of the recruitment committee, full professor recruitment, DTU Compute, DTU Technical University of Denmark, 2021
- Reviewer for Swedish Foundation for Strategic Research, Austrian Science Fund, Czech Science Foundation, Canadian Natural Sciences and Engineering Research Council, DFG German Research Foundation, Dutch Research Council
- Advisory Editor for Mathematical Methods in the Applied Sciences (8/2018–2/2024)
- Opponent or examiner of 13 dissertations
- Evaluator of 8 docent applications or habilitations

Organizing scientific meetings:

- *Finnish Mathematical Days 2024*, Espoo, Finland, January 4-5, 2024 (Chair of the Scientific Committee and of the Local Organizing Committee)
- *Mathematics of Electrical Imaging: Modeling, Theory and Implementation*, Toulouse, France, June 12-14, 2023 (one of the four main organizers together with Jeremi Darde, Jeremy Heleine and Lisl Weynans)
- *28th Nordic Congress of Mathematicians*, Espoo, Finland, August 18-21, 2022 (Chair of the Local Organizing Committee)
- 24th Inverse Days, Helsinki, Finland, December 11-13, 2018 (one of the four main organizers with Tatiana Bubba, Valentina Candiani and Antti Hannukainen)
- Distinguished Lectures on Inverse problems, Helsinki, Finland, August 4-8, 2014 (member of the Scientific Organizing Committee)
- Summer School on Computational Solution of Inverse Problems, Helsinki, Finland, June 2010 (one of the main organizers with Samuli Siltanen, Matti Määttä and Terhi Hautala)
- Organizer of 13 minisymposia and special sessions at international scientific conferences