

Curriculum Vitae



Personal Details and Date of CV

Name: Sampsa Tapio Pursiainen

ORCID: 0000-0002-9131-9070

Date of CV: August 29th, 2024

Date of Birth: 27/04/1978

Place of Birth: Espoo, Finland

Nationality: Finnish

Language Skills: Finnish (Mother tongue), English (Fluent), Swedish

Affiliation: Mathematics (Computing Sciences), Tampere University

Address: Korkeakoulunkatu 1, 33720 Tampere, Finland

Email: sampsa.pursiainen@tuni.fi

Web: [LinkedIn Profile](#), <https://research.tuni.fi/inverse/>

Degrees:

- 2009: PhD (Eng.), Institute of Mathematics, Helsinki University of Technology, Finland
- 2003: Master of Science, Institute of Mathematics, Helsinki University of Technology, Finland
- 2015 – Present: Docent (Adjunct Professor), Applied Mathematics, Department of Mathematics and Systems Analysis, Aalto University, Finland

Current Employment:

- 2022 – Present: Professor (Applied Mathematics), Mathematics, Tampere University, Finland

Previous Work Experience:

- 2019 – 2022: Associate Professor (Tenure Track), Mathematics, Tampere University, Finland
- 2015 – 2018: Assistant Professor (Tenure Track), Department of Mathematics, Tampere University of Technology (TUT), Finland
- 2012 – 2015: Postdoctoral Researcher, Research Council of Finland, Department of Mathematics and Systems Analysis, Aalto University, Finland
- 2012: Postdoctoral Researcher, Department of Mathematics, Tampere University of Technology, Finland
- 2011 – 2012: Postdoctoral Researcher, Department of Mathematics and Systems Analysis, Aalto University, Finland

Research Funding and Grants:

- 2011 – 2024: Total Research Council of Finland project funding EUR 2.139.149 (12 accepted projects)
- 2024– 2026: PI in Research Council of Finland project, Exploratory Study for Radar Tomography of Dimorphos - the Asteroid Moon of 65803 Didymos (359198)
- 2023– 2024: PI in Research Council of Finland researcher exchange project, Non-invasively reconstructing and inhibiting activity in focal epilepsy (DAAD/Research Council of Finland, 354976)
- 2021 – 2023: PI in Research Council of Finland (Era PerMed JTC2020) Project, Personalised diagnosis and treatment for refractory focal paediatric and adult epilepsy, PerEpi (Research Council of Finland, 344712)
- 2021 – 2023: PI in Research Council of Finland ICT2023 Project, FETD-Based Tomographic Full-Wave Radar Imaging of Small Solar System Body Interiors (Research Council of Finland, 336151)
- 2021 – 2026: PI in Tampere University Imaging Platform, Part of PROFi6 Profiling Funding by Research Council of Finland
- 2020 – 2022: PI in Research Council of Finland researcher exchange project, Reconstructing Somatosensory Network Connectivity with Advanced Bayesian Imaging and Finite Element Computations (DAAD, Research Council of Finland, 334465)
- 2018 – 2025: PI, Team Leader, Research Council of Finland Centre of Excellence in Modelling and Imaging (312341, 336792, 326590)

- 2018– 2020: PI in Research Council of Finland researcher exchange project, Advancing Finite Element Computations for Reconstructing and Manipulating the Human Somatosensory Cortex (DAAD/Research Council of Finland, 317165)
- 2016 – 2018: Research Council of Finland Key Project (Research Council of Finland, 305055), Department of Mathematics, Tampere University of Technology
- 2012 – 2015: Postdoctoral Researcher, Combining finite element and Bayesian techniques in EEG and MEG imaging of the brain (Research Council of Finland, 257288)
- 2018 – 2024: Funding admitted to supervised researchers exceeds a total of EUR 200.000 admitted by different Finnish Foundations and Research Funds as well as EUR 283.880 admitted by Research Council of Finland.

Research Output:

- 53 peer-reviewed scientific journal publications, >1021 citations, h-index 18, i10-index 31.
- Fields of Research: Applied Mathematics, Biomedical Engineering, Medical Imaging, Neuroscience, Inverse Problems, Imaging Sciences, Planetary Science, Astrophysics
- Significant methods published as open-source code projects on GitHub, for example, *Zeffiro Interface*, and data repositories under providers like Zenodo.

Supervision and leadership experience:

- Current primary supervisor of 4 Doctoral Researchers and 2 Postdoctoral Researchers.
- Supervisor of 6 completed PhD Dissertations (2 currently in pre-examination).
- Supervised Researchers:
 - 2022 – Present: Dr. Maryam Samavaki, PhD, Postdoctoral Researcher, Tampere University.
 - 2018 – Present: Dr. Alexandra Koulouri, PhD, Postdoctoral Researcher, Tampere University.
 - 2022 – Present: Mr. Santtu Söderholm, MSc, Doctoral Student, Tampere University.
 - 2021 – Present: Mr. Yusuf Oluwatoki Yusuf, MSc, Doctoral Student, Tampere University.
 - 2021 – Present: Mr. Fernando Galaz Prieto, MSc, Doctoral Student, Tampere University.
 - 2020 – Present: Mr. Joonas Lahtinen, MSc, Doctoral Student, Tampere University.
 - Supervised Master's Theses of Fernando Galaz Prieto, Lari Kuuppo, Qin He, and others.
 - 2017 – 2022: Dr. Atena Rezaei, PhD(Eng.), Doctoral Student, Tampere University of Technology.
 - 2016 – 2020: Mr. Mika Takala, MSc, Doctoral Student, Tampere University.
- Grants admitted to supervised students include funding from Väisälä Foundation, Jenny and Antti Wihuri Foundation, Alfred Kordelin Foundation, Emil Aaltonen Foundation, Finnish Academy of Sciences and Letters, and Academy of Finland.
- PI in Finnish Centre of Excellence in Inverse Modelling and Imaging, Research Council of Finland, 2018-2025; PI in Finnish Flagship of Advanced Mathematics for Sensing, Imaging and Modelling, Research Council of Finland, 2024-2031. In 2016-2024, PI in altogether 3 individual research projects and 1 ERA-NET PerMed project funded by Research Council of Finland.

Teaching Activities:

I have had acted as a teacher on university level mathematics courses since 2001. My recent teaching activity includes the following courses:

- 2024: Lecturer, MATH.APP.460 Numerical Analysis, Tampere University.
- 2024: Lecturer, MATH.MA.160 Differential and Integral Calculus, Tampere University.
- 2023: Lecturer, MATH.APP.460 Numerical Analysis, Tampere University.
- 2023: Lecturer, MATH.APP.730 Inverse Problems, Tampere University.
- 2023: Lecturer, MATH.MA.160 Differential and Integral Calculus, Tampere University.
- 2022: Lecturer, MATH.APP.460 Numerical Analysis, Tampere University.
- 2021: Lecturer, MATH.APP.730 Inverse Problems, Tampere University.
- 2020: Lecturer, MATH.MA.160 Differential and Integral Calculus, Tampere University.
- 2020: Lecturer, MAT-01366 Mathematics 3, Tampere University.
- 2019: Lecturer, MAT-68007 Topics in Mathematics: Math & Modeling Seminar, Tampere University.

Other Key Academic Merits:

- 2024: Pre-Examiner of doctoral dissertation, Candidate: Dr. Tomi Saleva, University of Eastern Finland, Joensuu, Finland.
- 2024: Evaluator of Habilitation Thesis, Candidate: Dr. Johannes Vorwerk, UMIT, Tirol, University, Innsbruck, Austria.
- 2023: External member of the doctoral dissertation board for Astrid Dufaure's dissertation, Supervisor: Prof. Christelle Eyraud, Aix-Marseille University, France.
- 2020: Evaluation board member for Dr. Oriane Gassot's doctoral dissertation, Supervisor: Prof. Alain Hérique, Grenoble Alpes University, France.
- 2021: Evaluator for Title of Docent, Candidate: Dr. Martin Simon, LUT University, Finland.
- 2020: Research grant evaluator for Finnish Cultural Foundation's Pirkanmaa Regional Fund.
- 2022 – 2023: Member of Neurocenter Finland's steering group and activity group.
- 2022 – 2025: Panel 1 (Mathematics) member in Publication Forum JUFO.
- 2022– Present: Involved in ESA's HERA mission workgroups focusing on radar modeling.
- 2019 – Present: External member in the Faculty Board of the Faculty of Engineering and Natural Sciences.
- 2021: Visiting Professor at Institut Fresnel, Aix-Marseille University, France.
- 2021: Organizer of Inverse Days 2021, an international conference and the annual meeting of the Finnish Inverse Problems Society.
- 2022: Scientific Organizing Committee member for Finnish Mathematical Days 2022.
- 2003 – Present: Member, Finnish Inverse Problems Society (FIPS).
- 2015 – Present: Member, Finnish Mathematical Society.

Scientific and societal impact

My research impacts both mathematical methods and their applications. I promote open science by publishing in open-access journals and providing preprints when allowed by journal policies. I also share significant computing codes and scripts on platforms like GitHub and Zenodo. An example is the Zeffiro Interface (ZI), a tool for modeling and inverting electromagnetic fields in the brain, which is available as both an article and a code package. ZI includes open-source codes and algorithms from various projects. The societal impact of my work is evident in its contributions to space science, exploration, healthcare, and the field of Inverse Problem Mathematics.