Research field

Biomedical systems, control theory, pathophysiological modeling, system identification, cancer treatment, female fertility, female hormonal control

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Johanna Sápi, PhD, habil

Academic degrees

2023 **Habilitation (Computer Science)**

2015 **PhD (Computer Science)**

Professional position

2024 – **Associate professor**
Obuda University
John von Neumann Faculty of Informatics
Biomatics and Applied Artificial Intelligence Institute

2024 – **Director of the Institute**
Obuda University
John von Neumann Faculty of Informatics
Biomatics and Applied Artificial Intelligence Institute

2024 – **Director of Operations**
Obuda University
John von Neumann Faculty of Informatics

2024 - **Vice Chair**
Obuda University
Doctoral School of Applied Informatics and Applied Mathematics

2024 - **Head of the research group**
Obuda University
University Research and Innovation Center
Physiological Controls Research Center (PhysCon)
Female Fertility and Hormone Control Research Group (FFHC)

2016 – 2024 **Assistant professor/researcher**
Obuda University
John von Neumann Faculty of Informatics
Institute of Biomatics
Physiological Controls Research Center

2015 – 2016 **Assistant lecturer/researcher**
Obuda University
John von Neumann Faculty of Informatics
Institute of Biomatics
Physiological Controls Group

2013 – 2015 **PhD student**
Obuda University
John von Neumann Faculty of Informatics
Institute of Applied Informatics
Physiological Controls Group

2012 – 2013 **PhD student**
Budapest University of Technology and Economics
Faculty of Electrical Engineering and Informatics

Department of Control Engineering and Information Technology
Laboratory of Biomedical Engineering

Education

2016	Semmelweis University's Institutional Animal Care and Use Committee Experimental animals – animal experiments course level "B" **The course gives permission to carry out animal experiments and design projects**
2013 – 2015	Obuda University Doctoral School of Applied Informatics and Applied Mathematics (PhD) **PhD in Applied Informatics** (Summa cum laude) Research topic: *Model-based control of cancer diseases* Thesis: *Controller-managed automated therapy and tumor growth model identification in the case of antiangiogenic therapy for most effective, individualized treatment* Supervisor: Levente Kovács PhD, habil
2012 – 2013	Budapest University of Technology and Economics Doctoral Schools at Faculty of Electrical Engineering and Informatics **PhD in Electrical Engineering** Research topic: *Model-based control of cancer diseases* Supervisor: Levente Kovács PhD
2010 – 2012	Budapest University of Technology and Economics Faculty of Electrical Engineering and Informatics **MSc in Biomedical Engineering** (Summa cum laude) Thesis: *Optimal control algorithms for antiangiogenic therapy based tumor treatment* Supervisors: Levente Kovács PhD, István Harmati PhD, Dániel András Drexler, Prof. Zoltán Sápi MD PhD
2006 – 2010	Semmelweis University Faculty of Medicine **BSc in Health care management** Thesis: *Interactive, personalized health education and therapy support via Internet for patients with metabolic syndrome* Supervisor: Zoltán Sára
1998 – 2004	St. Stephens Secondary School, Budapest Class of Natural Sciences **High school diploma**

Languages

Hungarian:	native
English:	advanced
Russian:	basic

Professional results

2009	III. place in Students' Scientific Association (TDK) conference Semmelweis University

Paper: *Metabolic Syndrome – the endemic*
Supervisor: Péter Csépe MD PhD
Semmelweis University, Faculty of Medicine, Department of Public Health

2017 Dean's award
Obuda University, John von Neumann Faculty of Informatics

Supervisor activities

- Budapest University of Technology and Economics, Faculty of Electrical Engineering and Informatics, Biomedical Engineering MSc thesis (1)
- Obuda University, John von Neumann Faculty of Informatics, Computer Science and Engineering BSc thesis (5)
- Obuda University, John von Neumann Faculty of Informatics, Computer Science and Engineering MSc thesis (4)
- Obuda University, John von Neumann Faculty of Informatics, Applied Mathematics MSc thesis (1)
- Pázmány Péter Catholic University, Faculty of Information Technology and Bionics, Molecular Bionics Engineering BSc thesis (1)
- Pázmány Péter Catholic University, Faculty of Information Technology and Bionics, Info-Bionics Engineering MSc thesis (1)
- Obuda University, John von Neumann Faculty of Informatics, Scientific Students' Associations (TDK) (3)

Courses taught

- Biomedical computing practices (BMEVIMIM301), BME-VIK, Biomedical Engineering MSc, in Hungarian
- Control Theory (BMEVIMM158), BME-VIK, Biomedical Engineering MSc, in Hungarian
- Biomedical Engineering (BMEVIIIAV09), BME-VIK, Biomedical Engineering MSc, in Hungarian
- Control Theory I. (NIRIT1SAEC), OE-NIK, Computer Science Engineering BSc, in Hungarian
- Control Theory II. (NIRIT2SAEC), OE-NIK, Computer Science Engineering BSc, in Hungarian
- Biomedical Engineering (NIRBE1SVNC) OE-NIK, Computer Science Engineering BSc, in Hungarian
- Basics of Information Systems (NIRIA1SEND), OE-NIK, Computer Science Engineering BSc, in English
- Control Engineering (NIRCE1SERD), OE, Science Without Borders program (for Brazilian students), in English
- Intelligent Systems (NIRIS1SERD), OE, Science Without Borders program (for Brazilian students), in English
- Control Theory (NIRIT0SAED), OE-NIK, Computer Science Engineering BSc, in Hungarian
- Biomedical Engineering (NAIBE1SEND), OE-NIK, Computer Science Engineering BSc, in English
- Systems and control theory (NAIRI1CANM), OE-NIK, Computer Science Engineering MSc, in Hungarian
- Systems and control theory (NAIRI1CENM), OE, Stipendium Hungaricum program, MSc, in English

Curricula development

- Systems and control theory KMOOC E-learning course (in Hungarian, 2015, Dr. habil. Levente Kovács, Dr. Johanna Sápi)

- Control Theory KMOOC E-learning course (in Hungarian, 2016, Dr. Dániel András Drexler, Dr. habil. Levente Kovács, Dr. Johanna Sápi)

Reviewer activities

- *Conference:*
  - IFAC (International Federation of Automatic Control)
  - INES (IEEE International Conference on Intelligent Engineering Systems)
  - CINTI (IEEE International Symposium on Computational Intelligence and Informatics)
  - SAMI (IEEE International Symposium on Applied Machine Intelligence and Informatics)
  - SACI (IEEE International Symposium on Applied Computational Intelligence and Informatics)
  - SMC (IEEE International Conference on Systems, Man, and Cybernetics)
  - ICIEA (IEEE Conference on Industrial Electronics and Applications)
  - PID (IFAC Conference on Advances in Proportional-Integral-Derivative Control)
  - CDC (IEEE Conference on Decision and Control)
- *Journal:*
  - Acta Polytechnica Hungarica
    → reviewer
    → Informatics Track Chair (2017 – 2018)
  - IEEE Access
- *Thesis:* Budapest University of Technology and Economics, Faculty of Electrical Engineering and Informatics (MSc); Obuda University, John von Neumann Faculty of Informatics (MSc)
- *Students' Scientific Association Conference (OU), National Students' Scientific Association Conference*
- *New National Excellence Program (ÚNKP)* Scholarship for MSc students – reviewer

Conference organization

- NOC Co-Chair, Young Author Prize Chair, 14th IFAC Symposium on Advances in Control Education (IFAC ACE 2025)
- Organizing Committee Chair: 30th Jubilee Neumann Colloquium, 2017, Budapest
- Local Organizing Committee member / Track Chair:
  - SMC 2016 Junior Systems Science & Engineering track chair – IEEE International Conference on Systems, Man, and Cybernetics, Budapest, Hungary
  - SMC 2016 Local Organizing Committee member – IEEE International Conference on Systems, Man, and Cybernetics, Budapest, Hungary
- Technical Program Committee member:
  - SMC 2016 – IEEE International Conference on Systems, Man, and Cybernetics, Budapest, Hungary
  - SAMI 2016 – IEEE International Symposium on Applied Machine Intelligence and Informatics, Herl'any, Slovakia

Research projects involvements

- ERC StG Grant "*Tamed Cancer*" 679681 (2016-2021), professional coordinator, researcher (Principal Investigator: Prof. Dr. Levente Kovács)
- TÁMOP 4.2.2.D-15/1/KONV-2015-0002 project "*Development of smart technologies for supporting high-tech industrial areas*" (2015), researcher

- National Development Agency, GOP-2011-1.1.1 program, GOP-1.1.1-11-2012-0055 project, "*DIALOGIC – Mathematical model-based decision support system to improve diabetes health management*" (2012-2013), researcher

Professional affiliations and contributions

- John von Neumann Computer Society Biomedical Section board member (2016 –), secretary (2024 –)
- IEEE (Institute of Electrical and Electronics Engineers) member (Membership number: 92621920)
- IEEE Student member (2013 – 2015)
- IEEE member (2015 –)
- IEEE Systems, Man, and Cybernetics (SMC) Society member (2015 –)
- IEEE SMC Hungary Section Chapter secretary (2016 –)
- IEEE Young Professionals member (2015 –)
- IEEE Women in Engineering member (2015 –)
- IEEE Engineering in Medicine and Biology Society member (2015 –)

Publications

Johanna Sápi's publications in MTMT:
https://vm.mtmt.hu//search/slist.php?lang=0&AuthorID=10036432

She was published 49 scientific publications and her cumulative impact factor is 27.21, h-index is 18.