Dr. Nikola **Simidjievski**

Associate Professor

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About me

I am an Associate Professor at Télécom Paris, Institut Polytechnique de Paris, France. My main research focus is at the intersection of machine learning, medicine and biology. Specifically, I am interested in different topics of multimodal data analysis, data representation learning, and explainable data analysis with applications in medicine (oncology) and healthcare. I have experience in computational scientific discovery (physics-informed ML) and I am quite keen on machine learning for modelling dynamical systems. More broadly, I am also interested in applications of machine learning for space research.

Research interests

- Machine Learning • Multimodal Data Analysis • Data Representation Learning
- Deep Learning • Explainable Data Analysis • Probabilistic Machine Learning
- Graph-based Learning • Computer Vision • Computational Scientific Discovery (Physics-Informed ML)

Applications in Medicine (Oncology), Neuroscience & Biology [primary] • Space Research & Remote Sensing [secondary]

Technical Skills

- Python • ML frameworks (Scikit Ecosystem, PyTorch/Keras etc.)
- Scientific & Data Viz Python frameworks
- Java • C/C++ • R • Bash • Databases (Relational & Non-relational)

Language Skills

- English [full professional proficiency]
- Slovenian & Serbo-Croatian [bilingual proficiency]
- Macedonian [native]

Professional Experience

2025 -	**Associate Professor**, Télécom Paris, Institut Polytechnique de Paris, France
2025 -	**Visiting Fellow**, Department of Oncology and Department of Computer Science, University of Cambridge, UK
2023 - 2025	**Senior Research Associate**, PBCI, Department of Oncology, Univ. of Cambridge, UK
2019-2023	**Research Associate**, Department of Computer Science and Technology, Univ. of Cambridge, UK
2019 -	**Visiting Research Associate**, Dep. of Knowledge Technologies, Jožef Stefan Institute, Slovenia
2018 -	**Co-Founder/Scientific Advisor**, Bias Variance Labs, d.o.o, Ljubljana, Slovenia
2011 - 2019	**Research Assistant**, Department of Knowledge Technologies, Jožef Stefan Institute, Slovenia
2010	**Interring Young Researcher**, Laboratoire d'Informatique de l'univeristé de Franche-Comté, France
2009 - 2011	**Young Researcher**, Macedonian Academy of Sciences and Arts, Republic of N. Macedonia

Education

Jožef Stefan International Postgraduate School — *Ljubljana,*
Jožef Stefan Instiute — *Slovenia*
Doctor of Philosophy (Ph.D.) — *September 2016*

- Area: Machine Learning
- Thesis title: Ensembles of process-based models of dynamic systems
- Advisors: Prof. Sašo Džeroski & Prof. Ljupčo Todorovski

Faculty of Electrical Engineering and Information Technologies, — *Skopje,*
University "Ss. Cyril and Methodius" — *Republic of N. Macedonia*
Undergraduate & Graduate Degrees — *2009/2011*

- MSc.: Computer Science; Summa cum laude [10/10]
- BSc.: Computer Science; Magna cum laude [9.25/10]

Projects & Grants

Projects

2023 - 2028	**SYNERGIA:** Multimodal Data Analysis for Breast Cancer, U.S. Department of Defense (DoD) [GRANT13769713], **Co-Investigator**
2019 - 2023	**Integrated Cancer Medicine**, Mark Foundation & Cancer Research UK Cambridge Centre [C9685/A25177], Contributor
2014 - 2019	**The Human Brain Project**, FP7/H2020 FET Flagship ICT-2013-60410, Contributor
2018 - 2021	**IMPERATRIX:** Improving reproducibility and reusability of complex data analysis, Slovenian Research Agency J2-9230, Contributor
2016 - 2019	**Machine Learning for System Sciences** , Slovenian Research Agency N2-0056, Contributor
2014 - 2017	**MAESTRA:** Learning from Massive, Incompletely annotated and Structured Data , FP7 FET Open Xtrack EC ICT-2013- 612944, Contributor
2011 - 2014	**SUMO:** Super Modelling by combining imperfect models, FP7 EC ICT-2009-266722, Contributor

Grants

2025 - 2024	**AiSTRA:NOVA:** Knowledge Graph Reasoning for AI-Enhanced Spacecraft Health Monitoring, European Space Agency, **Co-Investigator**	*400,000 EUR*
2024 - 2026	**FAIR-EO:** FAIR, Open and AI-Ready Earth Observation Resources, OSCARS Open Science Clusters, Horizon Europe, **Co-Investigator**	*250,000 EUR*
2023 - 2024	**AiSTRA:** Understanding spacecraft anomalies with knowledge graph reasoning, European Space Agency [4000142664/23/NL/MH/mp], **Co-Investigator**	*100,000 EUR*
2020 - 2022	**AiTLAS:** AI4EO prototyping environment, European Space Agency [4000130508/20/I-NB], **Principal Investigator**	*500,000 EUR*
2019 - 2021	**GalaxAI:** Machine Learning for Spacecraft Operations, European Space Agency, [4000128994/19/D/AH], **Principal Investigator**	*500,000 EUR*

Awards & Fellowships

2011 - 2016	**PhD Scholarship** , Slovenian Research Agency (ARRS), Slovenia
2016	**1st Place (Team) - Mars Express Power Challenge**, European Space Agency
2005 - 2011	**Undergrad/Postgrad student scholarships**, Ministry of Education, N. Macedonia

Teaching & Mentoring

Courses

2026 -	**Data Science and AI**, Master Track Coordinator	*Télécom Paris*
2026 -	**Data science & machine learning**, MSIR	*Télécom Paris*
2026 -	**Intro to Machine Learning & BigData**, SMOB	*Télécom Paris*
2025 -	**Databases**, Graduate Studies	*Télécom Paris/IP Paris]*
2025 -	**Logics & Symbolic AI**, Graduate Studies	*Télécom Paris/IP Paris*
2024 - 2025	**Multimodal Machine Learning**, MPhil/Part III Graduate Studies	*University of Cambridge*
2020	**ML for Modelling Medical Data**,	*CamBioScience*

Mentoring

Post-doctoral Fellows

2024 -	**Dr. Aris Sionakidis,** Multimodal Machine Learning for Breast Cancer	*University of Cambridge*
2024 -	**Dr. Melis Irfan,** Breast Cancer Histopathology with Multimodal ML	*University of Cambridge*
2024 -	**Dr. Zak Kinsella,** Breast Cancer Histopathology	*University of Cambridge*

PhD Supervisions

2025 -	**Tom Maye Lasserre,** co-supervised with VT. Nguyen	*Institut Polytechnique de Paris*
2025 -	**Tuan-Kiet Doan,** co-supervised with VT. Nguyen	*Institut Polytechnique de Paris*
2025 -	**Trung-Hieu Tran,** co-supervised with VT. Nguyen	*Institut Polytechnique de Paris*
2023 -	**Xiangjian Jiang,** co-supervised with M. Jamnik	*University of Cambridge*
2022 -	**Konstantin Hemker,** co-supervised with M. Jamnik	*University of Cambridge*
2021 - 2025	**Andrei Margeloiu,** co-supervised with M. Jamnik	*University of Cambridge*
2021 -	**Urška Matjašec,** co-supervised with M. Jamnik	*University of Cambridge*
2019 - 2023	**Paul Scherer,** Advisor	*University of Cambridge*
2019 - 2022	**Jacob Deasy,** Advisor	*University of Cambridge*

MSc Supervisions

2025/2026	**Marc Farah,** PhD Track, DataAI	*Institut Polytechnique de Paris*
2025/2027	**Daniela Cojocaru,** PhD Track, DS4Health	*Institut Polytechnique de Paris*
2025/2027	**Quoc-Dat Tran,** PhD Track, DataAI	*Institut Polytechnique de Paris*
2024/2025	**Sidharrth Nagappan,** co-sup. M. Jamnik & K. Hemker - Distinction	*University of Cambridge*
2023/2024	**Zak Buzzard,** co-sup. M. Jamnik & K. Hemker - Distinction	*University of Cambridge*
2023/2024	**Laura Wenderoth,** co-sup. M. Jamnik & K. Hemker - Distinction	*University of Cambridge*
2022/2023	**Gabriele Dominici,** w/ Distinction	*University of Cambridge*
2022/2023	**Jonas Jurss,** w/ Distinction	*University of Cambridge*
2022/2023	**Navindu Leelarathna,** w/ Distinction	*University of Cambridge*
2022/2023	**Binjie Chen,** w/ Distinction	*University of Cambridge*
2022/2023	**Xiangjian Jiang,** co-sup. M. Jamnik - w/ Distinction	*University of Cambridge*
2022/2023	**Muhammad Hamza Sajjad,** co-sup. M. Jamnik - w/ Distinction	*University of Cambridge*
2022/2023	**George Pulickal,** co-sup. with P. Lio	*University of Cambridge*
2021/2022	**Tom McIver,** co-sup.with Pietro Lio	*University of Cambridge*

Invited Talks

Jul. 2024	**Integrative Cancer Medicine,** ”Multimodal AI for Cancer” Session	*Cambridge, UK*
Sep. 2022	**CCAIM Summer School,** AI and Machine Learning in Healthcare	
Jan. 2021	**Integrated Cancer Medicine Seminar,**	*United Kingdom*
Jan. 2021	**Healthcare Research Showcase,** University of Cambridge Computer Lab	*United Kingdom*
Mar. 2020	**Machine Learning for Space,** Frankfurt Data Science	*Germany*
Jun. 2019	**MFICM Data Integration Workshop,**	*Cambridge, UK*

Community Service

Associate Editor & Program Committee member

- Associate Editor of *Expert Systems with Applications*, Elsevier
- Editorial Board member of *Machine Learning Journal*, Springer
- Review Editor of *Frontiers in Genomics*, Frontiers
- PC/AC member of ICML, NeurIPS, ICLR, IJCAI, ECML PKDD, Discovery Science etc. (with multiple top-reviewer recognitions)

Program Chair & Organisation

Sep. 2025 **Discovery Science 2025**,
Sep. 2023 **"Neuro-Explicit AI and Expert-informed Machine",** ECML-PKDD 2023 workshop
Sep. 2021 **"Discover the mysteries of the Maya",** ML Challenge & Workshop at ECML PKDD 2021
Aug. 2021 **"AI for Spacecraft Longevity",** IJCAI 2021 Workshop
Jul. 2021 **"Machine Learning for Spacecraft Health",** SMC-IT 2021 Workshop
Feb. 2017/18 **Human Brain Student Conference**,
Sep. 2017 **ECML-PKDD 2017,** European Conf. on Machine Learning

Outreach

Oct. 2024 **Interview for Breast Cancer Awareness Month,** Precision Breast Cancer Institute, Cambridge
Feb. 2021 **Interview for Integrated Cancer Medicine podcast**, Mark Foundation & CRUK Cambridge
Mar. 2020 **Interview for Cambridge Communications office**, on AI for Integrative Cancer Medicine

Publications

Complete list of publications: `https://scholar.google.com/citations?user=T5l2R6IAAAAJ`