

GERMANS SAVCISENS, PhD

[gɪ'irmən saftʃiːsən]

Postdoctoral Research Associate

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PROFILE

Germans is a postdoctoral research associate at the Khoury College of Computer Sciences, working with Professor Tina Eliassi-Rad. His research focuses on enhancing the transparency and fairness of machine learning algorithms used in network science, with a particular interest in mitigating biases in algorithms that model human behavior and social interactions.

Germans obtained his PhD from the Technical University of Denmark, where he focused on using foundation models to study individual socioeconomic and health trajectories. His work explored the ability of such models to compress multimodal time series and provide interpretable predictions.

He obtained an MSc in Human-Centered Artificial Intelligence from the Technical University of Denmark in 2020 and a BSc in Human-Computer Interaction from Aalborg University in 2016.

His areas of interest include Foundation Models, Algorithmic Fairness, Digital Ethics, Network Science, Human Behaviour, and Social Interactions.

WORK EXPERIENCE

Postdoctoral Research Associate | Northeastern University May 24 — now

At RADLAB, I explore the issues of the transparency and fairness of machine learning algorithms used in network science.

My main focus areas are:

- Trustworthy Network Science,
- Auditing of Machine Learning algorithms that model human behavior,
- Team Formation Problem and Collaboration Networks.

Research Assistant | Technical University of Denmark & University of Copenhagen Dec 23 — Apr 24

Conducted research on foundation models and supervised projects related to modeling life trajectories and using smartphones.

PhD Student | Technical University of Denmark & University of Copenhagen Sep 20 — Dec 23

Explored nationwide socioeconomic & health data to predict life outcomes with transformer-based neural networks,

- Focused on the life-outcomes prediction, evaluate, and interpret outputs of neural models,
- Developed and implemented machine learning models for representation learning,
- Focused on Algorithmic Auditing and Fairness.

Guest Researcher | Denmark Statistics Sep 20 — Dec 23

Affiliated with the Data Science Lab as a part of my Ph.D. Research:

- Processed large-scale behavioral datasets for exploratory & predictive analysis,
- Collaborate with Denmark's leading economists & social scientists to identify demographic patterns.

Visiting PhD Student | Network Science Institute (Northeastern University) Sep 22 — Feb 23

I visited RADLAB (Tina Eliassi-Rad) to work on a project within Algorithmic Auditing and Fairness.

Global Data Science Researcher | Novo Nordisk Sep 19 — Apr 20

Conducted research with the Data Science department on predictive modeling for medical adherence:

- Processed and analyzed Electronic Health Records,
- Developed hierarchical attention models for the health-outcome predictions,
- Deployed the model to leverage behavioral data affecting key business areas.

Global IT Infrastructure Assistant | Novo Nordisk May 17 — Sep 19

- Enhanced data collection procedures, assisted in automating data processing challenges,
- Built reporting dashboards and provided ad-hoc analysis and visualization of various reports.

EDUCATION

Technical University of Denmark | Copenhagen, Denmark Sep 20 – March 24

PhD in Applied Mathematics (Computational Social Science)

Aalto University | Helsinki, Finland Feb 21 – Jun 21

Visiting Student for Digital Ethics and Statistical Natural Language Processing

Technical University of Denmark | Copenhagen, Denmark Feb 18 – May 20

MSc in Human-Centred Artificial Intelligence

Aalborg University | Copenhagen, Denmark Sep 13 – Jul 16

BSc in Human-Computer Interaction

SKILLS

Languages: Russian (native) – English (fluent) – Latvian (proficient) – Danish (beginner) – French (beginner)

Coding: Python (advanced) – SQL (advanced) – C# (proficient)

Tools: PyTorch (+ Lightning) – Pandas/Dask – Scikit – NetworkX – Scipy – HuggingFace

Hard Skills: Time-series analysis – Fairness & Bias – Robust Models – Data Processing – Network Analysis – Design of Experiments – Foundation Models – Curriculum Learning – Representation Learning

PUBLICATIONS

[Using Sequences of Life-events to Predict Human Lives](#)

Germans Savcicens, Tina Eliassi-Rad, Lars Kai Hansen, Laust Mortensen, Lau Lilleholt, Anna Rogers, Ingo Zettler, Sune Lehmann
Nature Computational Science (2023)

[A Sustainable West? Analyzing Clusters of Public Opinion in Sustainability Western Discourses in a Collection of Multilingual Newspapers \(1999-2018\)](#)

Elena Fernández Fernández, *Germans Savcicens* | Proceedings of Digital Humanities in the Nordic and Baltic Countries (2023)

[An Industrial West? A Mixed-Methods Analysis of Newspapers Discourses about Technology over One Hundred and Ten Years \(1830-1940\)](#)

Emmanuelle Denove, Elisa Michele, *Germans Savcicens*, Elena Fernández Fernández | Preprint

SELECTED ACADEMIC TALKS

“life2vec: Life trajectories in high dimensional spaces” Generative AI in Life Science (Conference) Denmark	Apr 24
“Seminar talk on life2vec model” Centre for Demographic Science (University of Oxford) UK	Jan 24
“Using Life-Sequences to Predict Human Lives” ODISSEI Lecture Netherlands	Sep 23
“Danish Registry Data and Socio-Economic Trajectories” Human Dynamics Lab (MIT) US	Oct 22
“Life2vec: What Transformers can learn about us from the government statistics,” Centre for Social Data Science (University of Copenhagen) Denmark	Nov 21
“Representation of Behavior with Transformers: Beyond NLP” Centre for Basic Machine Learning in Life Science (MLLS) Denmark	Nov 21

TEACHING

Principal Lecturer & Examiner

Algorithmic Fairness, Accountability, and Ethics | IT University of Copenhagen Jan 23 — Jun 23

Teaching Assistant / Assistant Lecturer

As a Teaching Assistant or Assistant Lecturer, I navigate students with their assignments and projects, as well as develop course content and measure student’s final performance:

Algorithmic Fairness, Accountability, and Ethics | IT University of Copenhagen Jan 22 — May 22

Advanced Machine Learning | Technical University of Denmark Jan 21 — Jun 21

Social Data Analysis and Visualizations | Technical University of Denmark Feb 19 — May 21

Social Networks and Interactions | Technical University of Denmark Sep 19 — Dec 20

Supervision

MSc Student Projects: (1) *Rule Detection in Unstructured Documents*, (2) *Forecasting Smartphone App Usage*, (3) *Automating the Identification of Compliance Rules from Investment Mandates*, (4) *Predictive Modelling of Mobile App Usage*

GRANTS

Villum Foundation: Villum Synergy (Sponsor for PhD Studies) | Denmark 2020-2023

Otto Mønsted Fond (Travel Grant) | Denmark 2022

STIBO Foundation (Travel Grant) | Denmark 2022

