

GERMANS SAVCISENS

Ph.D. Student in Computational Social Science

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PROFILE

I am a third-year Ph.D. student in Computational Social Sciences with a proven track record in analyzing large datasets and developing methods to model unstructured time series. My research primarily explores the Representation of Human Behaviour. It leverages the capabilities of Transformer-based models to analyze sequences of socio-economic data, encompassing fields such as income, health, and education.

With proficiency in data processing & mining and the visualization of complex datasets, I also bring expertise in Algorithmic auditing and fairness. This unique blend of skills and interests drives me to push the boundaries of what's possible in understanding and modeling human behavior.

My areas of interest span NLP, Foundation Models, Algorithmic Fairness & Explainability, and Human Behaviour.

WORK EXPERIENCE

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

I am using nationwide social-economic & health data to predict life outcomes by applying transformer-based neural networks.

- Applied deep learning for the life-outcomes prediction, evaluated and interpreted outputs of neural models.
- Developed and implemented machine learning models for representation learning.
- Focus on Algorithmic Auditing and Fairness.

Guest Researcher | Denmark Statistics Sep 20 — Present

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

- Mined & processed large-scale behavioral datasets for exploratory & predictive analysis.
- Collaborated 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:

- Worked with IT, engineering, and product managers to extract valuable business insights.
- 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

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 (PREPRINT)

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

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

ACADEMIC TALKS

"Danish Registry Data and Socio-Economic Trajectories"	Oct 22
MIT, Human Dynamics Lab Boston, US	
"Life2vec: What Transformers can learn about us from the government statistics,"	Nov 21
Centre for Social Data Science Copenhagen, Denmark	
"Representation of Behavior with Transformers: Beyond NLP"	Nov 21
Centre for Basic Machine Learning in Life Science (MLLS) Copenhagen, Denmark	
"Representation of Human Behavior"	Sep 21
Statistics Denmark (Nation-scale Social Networks) Copenhagen, Denmark	

TEACHING

Principal Lecturer & Examiner

Algorithmic Fairness, Accountability, and Ethics IT University of Copenhagen	Jan 23 — Jun 23
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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: *Rule Detection in Unstructured Documents*, *Forecasting Smartphone App Usage*, *Visualizing Data of Plantation Industry*

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
William Demant Fonden (Travel Grant) Denmark	2022