Daniel Gedon

Tübingen, July 2025

Personal data

Current position:	Postdoctoral Fellow
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Birth:	11.05.1994 in Feuchtwangen, Germany
Citizenship:	German

Degrees

Ph.D., Machine Learning 08/2019 - 08/2024
Uppsala University, Sweden.
Advisor: Thomas Schön

M.Sc., System and Control 09/2017 - 07/2019
TU Delft, the Netherlands.
Advisor: Michel Verhaegen

B.Eng., Aerospace Engineering 09/2012 - 09/2015
Baden-Württemberg Corporate State University, Germany.
Advisor: Thomas Ott
Cooperation with Airbus Defence & Space, Friedrichshafen (Germany).

Postdoctoral Training

Postdoctoral Fellow 09/2024 - expected 09/2027
Tübingen University, Germany.
Advisor: Jakob Macke

Awarded grants

Knut and Alice Wallenberg Foundation (WASP). Spring 2024
2-year postdoctoral scholarship at the Institute of Science and Technology Austria.
Declined in favor of another postdoctoral position.

Knut and Alice Wallenberg Foundation (WASP). Spring 2023
For a three-month research visit to Mikhail Belkin's lab at UCSD.

Invited talks

1. ERNSI Workshop, Stockholm. September 2023
   Deep Networks for System Identification: A Survey
2. Belkin Lab Group Meeting, San Diego. March 2023
   No double descent in PCA: Training and pre-training in high dimensions
3. SciLifeLab DDLS annual conference, Stockholm. November 2022
   Panel discussion: *Training in Data Driven Life Science*
4. Joint DSBS / FMS Meeting, Malmö. November 2022
   Deep Learning-based ECG Reading in the Emergency Department - Diagnosis of Myocardial Infarctions
5. NeurIPS Workshop Machine learning from ground truth: New medical imaging datasets for unsolved medical problems, online. December 2021
   ResNet-based ECG Diagnosis of Myocardial Infarction in the Emergency Department
6. Computing in Cardiology (CinC), online. September 2021
   First Steps Towards Self-Supervised Pretraining of the 12-Lead ECG
7. 19th IFAC Symposium on System Identification (SYSID), online. July 2021
   Deep State Space Models for Nonlinear System Identification
8. 27th European Signal Processing Conference (EUSIPCO), A Coruña. September 2019
   Tensor Network Kalman Filter for LTI Systems

Supervision

Philipp von Bachmann, MSc student project Spring 2022
Theogene Habineza, MSc thesis project Spring 2022

Longer scientific visits

Visiting Ph.D. Student with UC San Diego (3 months). Host: Mikhail Belkin. Spring 2023

Teaching

Teacher 09/2024- Present
Tübingen University, Germany
Seminar: Machine Learning Methods for Scientific Discovery, MSc level Spring 2025
Teamproject: Benchmarking for misspecified SBI, BSc level Spring 2025

Lecturer 09/2023 - 08/2024
Uppsala University, Sweden
Advanced Probabilistic Machine Learning, 1RT705/1RT003, MSc level [Syllabus] Fall 2023

Teaching Assistant 10/2018 - 08/2024
Uppsala University, Sweden
Statistical Machine Learning, 1RT700, MSc level [Syllabus] Fall 2023
Advanced Probabilistic Machine Learning, 1RT705/1RT003, MSc level [Syllabus] Fall 2023
Empirical Modelling & System Identification, 1RT890/1RT885, MSc level [Syllabus] Fall 2023
Artificial Intelligence and Machine Learning, WASP Graduate School, PhD level Spring 2023

Statistical Machine Learning, 1RT700, MSc level [Syllabus] Fall 2022
Advanced Probabilistic Machine Learning, 1RT705/1RT003, MSc level [Syllabus] Fall 2022
Artificial Intelligence and Machine Learning, WASP Graduate School, PhD level [Syllabus] Spring 2022
Statistical Machine Learning, 1RT700, MSc level [Syllabus] Spring 2022
Statistical Machine Learning, 1RT700, MSc level [Syllabus] Fall 2021
Automatic Control II, 1RT495, MSc level [Syllabus] Fall 2021
Introduction to Computer Controlled Systems, 1RT485, BSc level [Syllabus] Spring 2021
System Identification, 1RT885, MSc level [Syllabus] Spring 2020
Introduction to Computer Controlled Systems, 1RT485, BSc level [Syllabus] Spring 2020

TU Delft, The Netherlands

Filtering and Identification, SC42025, MSc level [Syllabus] Fall 2018

Pedagogical education

Academic teacher training course, Uppsala University, 7.5 credits, 2022, [Syllabus]

Industrial positions

Satellite Attitude and Orbit Control System Analyst 10/2015 - 09/2016
Airbus Defence and Space, Friedrichshafen, Germany

Other experience

Solo Travel 10/2016 - 04/2017
Long distance hike alone in Patagonia [Greater Patagonian Trail].
Language school: Spanish (Sucre, Bolivia).

Voluntary Work 04/2017 - 08/2017
Ansbach, Germany.
Work with primary school children, elderly, and refugees.

Languages

German (mother tongue)
English (fluent)
Swedish (intermediate knowledge)
Spanish (beginner)

Publications

Pre-prints and submitted manuscripts

M1. Julius Vetter, Manuel Gloeckler, **DG**, Jakob H. Macke, **Effortless, Simulation-Efficient Bayesian Inference using Tabular Foundation Models**, *arXiv:2504.17660*, 2025. [arXiv]

Peer-reviewed publications

P1. Gianluigi Pillonetto, Aleksandr Aravkin, **DG**, Lennart Ljung, Antônio H. Ribeiro, Thomas B. Schön, **Deep networks for system identification: a Survey**, *Automatica*, 2025. [DOT] [arXiv]

P2. **DG**, Antônio H. Ribeiro, Thomas B. Schön, **No Double Descent in Principal Component Regression: A High-Dimensional Analysis**, *ICML*, 2024. [OpenReview] [ICML] [code]

P3. **DG**, Amirhesam Abedsoltan, Thomas B. Schön, Mikhail Belkin, **Uncertainty Estimation with Recursive Feature Machines**, *UAI*, 2024. [OpenReview] [code]

P4. Philipp Von Bachmann, **DG**, Fredrik K. Gustafsson, Antônio H. Ribeiro, Erik Lampa, Stefan Gustafsson, Johan Sundström, Thomas B. Schön, **Evaluating regression and probabilistic methods for ECG-based electrolyte prediction**, *Scientific Reports* 14, 15273, 2024. [DOI] [arXiv] [code] [models]

P5. **DG**, Amirhesam Abedsoltan, Thomas B. Schön, Mikhail Belkin, **On Feature Learning of Recursive Feature Machines and Automatic Relevance Determination**, *UniReps: the First Workshop on Unifying Representations in Neural Models* Workshop at NeurIPS, 2023. [NeurIPS23] [OpenReview]

P6. Theogene Habineza, Antônio H. Ribeiro, **DG**, Joachim A. Behar, Antonio Luiz P. Ribeiro, Thomas B. Schön, **End-to-end Risk Prediction of Atrial Fibrillation from the 12-Lead ECG by Deep Neural Networks**, *Journal of Electrocardiology*, 2023. [DOI] [arXiv] [code] [models]

P7. Carl Jidling, **DG**, Thomas B. Schön, Claudia Di Lorenzo Oliveira, Clareci Silva Cardoso, Ariela Mota Ferreira, Luana Giatti, Sandhi Maria Barreto, Ester C. Sabino, Antonio L. P. Ribeiro, Antônio H. Ribeiro, **Screening for Chagas disease from the electrocardiogram using a deep neural network**, *PLOS Neglected Tropical Diseases*, 2023. [DOI] [medRxiv] [code] [models]

P8. **DG**, Antônio H. Ribeiro, Niklas Wahlström, Thomas B. Schön, **Invertible Kernel PCA with Random Fourier Features**, *IEEE Signal Processing Letters*, 2023. [DOI] [arXiv] [code]

P9. **DG***, Stefan Gustafsson*, Erik Lampa, Antônio H. Ribeiro, Martin J. Holzmann, Thomas B. Schön, Johan Sundström, **Development and validation of deep learning ECG-based prediction of myocardial infarction in emergency department patients**, *Scientific Reports* 12, 19615, 2022. [DOI]

P10. **DG***, Stefan Gustafsson*, Erik Lampa, Antônio H. Ribeiro, Martin J. Holzmann, Thomas B. Schön, Johan Sundström, **ResNet-based ECG Diagnosis of Myocardial Infarction in the Emergency Department**, *Machine learning from ground truth: New medical imaging datasets for unsolved medical problems* Workshop at NeurIPS, 2021, Online. (Spotlight talk) [Paper] [Slides]

P11. **DG**, Antônio H. Ribeiro, Niklas Wahlström, Thomas B. Schön, **First Steps Towards Self-Supervised Pretraining of the 12-Lead ECG**, *Computing in Cardiology (CinC)*, 2021, online. [DOI] [Slides] [Video]

P12. **DG**, Niklas Wahlström, Thomas B. Schön, Lennart Ljung, **Deep State Space Models for Nonlinear System Identification**, *Proceedings of the 19th IFAC Symposium on System Identification (SYSID)*, 2021, online. [DOI] [arXiv] [Code] [Slides]

P13. Antônio H. Ribeiro, **DG**, Daniel Martins Teixeira, Manoel H. Ribeiro, Antonio L. Pinho Ribeiro, Thomas B. Schön, Wagner Meira Jr., **Automatic 12-lead ECG classification using a convolutional network ensemble**, *Computing in Cardiology (CinC)*, 2020, Online. [DOI] [Code] [Slides]

P14. **DG**, Pieter Piscaer, Kim Batselier, Carlas Smith and Michel Verhaegen, **Tensor Network Kalman Filter for LTI Systems**, *27th European Signal Processing Conference (EUSIPCO)*, A Coruña, Spain, 2019. [DOI] [Code] [Slides]

P15. **DG**, **Tensor Network Kalman Filter for Large-Scale MIMO Systems: With Application to Adaptive Optics**, *Master Thesis*, TU Delft, The Netherlands, 2019. [Thesis] [Slides]

P16. Thomas Ott, Marc Hirth, Massimo Casasco, Simon Görries, **DG**, Alison Ponche, **PointingSat – High Precision Pointing Error Analysis with ESA PEET v1.0**, *10th International ESA Conference on Guidance, Navigation & Control Systems*, Salzburg, Austria, 2017. [Paper]