Dr. rer. nat. Sebastian Lapuschkin (*né Bach*)

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Short Bio

Sebastian Lapuschkin is the Head of the Explainable Artificial Intelligence research group at Fraunhofer Heinrich Hertz Institute (HHI) in Berlin.

He received his Ph.D. degree with distinction from the Berlin Institute of Technology in 2018 for his pioneering contributions to the field of Explainable Artificial Intelligence (XAI) and interpretable machine learning. From 2007 to 2013 he studied computer science (B. Sc. and M. Sc.) at the Berlin Institute of Technology, with a focus on software engineering and machine learning.

Sebastian is the recipient of multiple awards, including the Hugo-Geiger-Prize for outstanding doctoral achievement and the 2020 Pattern Recognition Best Paper Award.

His work is focused on pushing the boundaries of XAI, e.g, for achieving human-understandable explanations, and towards the effective and efficient utilization of interpretable feedback for the improvement of machine learning systems and data.

Further research interests include efficient machine learning and data analysis, as well as data and algorithm visualization.

Professional Experience

Fraunhofer Heinrich-Hertz-Institute — Berlin, Germany

Head of Explainable Artificial Intelligence — *Jan '21 – today*
Research Group Leadership and direction of XAI research.
(current number of staff: 2 PostDocs, 17 PhD researchers & 15 student research assistants).

Tenured Researcher — *Jan '19 – Dec '20*
PostDoc research position in the Machine Learning Group at Fraunhofer HHI.

Research Associate — *Oct '14 – Dec '18*
Founding member of the Machine Learning Group at Fraunhofer HHI.

Berlin Institute of Technology — Berlin, Germany

Research Associate — *Sep '13 – Sep '14*
Supervision by Prof. Dr. Klaus-Robert Müller and Prof. Dr. Alexander Binder.

Student Research- & Teaching Assistant — *Oct '11 – Aug '13*
Research assistant to Prof. Dr. Alexander Binder at the machine learning group at TU Berlin.
Teaching assistant to Prof. Dr. Klaus-Robert Müller, Prof. Dr. Dr. Franz Király, Dr. Irene Dowding (née Winkler) and Dr. Daniel Bartz.

Student Teaching Assistant — *Oct '09 – Sep '11*
Teaching assistant to Prof. Dr. Marc Alexa, Prof. Dr. Odej Kao and Prof. Dr. Oliver Brock.

Education

Berlin Institute of Technology — Berlin, Germany

PhD in Machine Learning (with distinction / "summa cum laude") — *2013 – 2018*
Thesis: "Opening the machine learning black box with Layer-wise Relevance Propagation"
Supervision headed by Prof. Dr. Klaus-Robert Müller.

Master of Science in Computer Science — *2010 – 2013*
Focus on machine learning, computer vision and large scale data analysis.

Bachelor of Science in Computer Science — *2007 – 2010*
Focus on algorithms and software development

Deutschhaus-Gymnasium — Würzburg, Germany

Abitur (pre-university secondary education) — *1998 – 2007*

Teaching

Teaching of and teaching support for 18 university courses since 2009

Supervision & Guidance

Collaboration with and supervision of 2 PostDocs, 25 PhD Students, 29 Master's Students, 2 Bachelor's Students and 5 Guest Researchers since 2017

Third-Party Funded Research Projects

6 third-party funded research projects acquired and managed since 2018

Awards

Stanford Top 2% Scientist Worldwide 2022 (2023)
Best Short Paper Award (2023)
Stanford Top 2% Scientist Worldwide 2021 (2022)
Pattern Recognition Best Paper Award and Pattern Recognition Medal (2020)
Hugo-Geiger-Prize (2019, 1st place)
Freunde des HHI (2019)
ERCIM (2019, finalist)
Best Paper Award (2016)

Patents

Analyzing an Inference of a Machine Learning Predictor
Method and System for Simulating an Optical Image of a Photonic and/or Electronic Device
Pruning and/or Quantizing Machine Learning Predictors
Relevance Score Assignment for Artificial Neural Networks

Talks & Lectures

Over 32 invited talks and individual lectures held since 2017.
Excludes teaching activities and internal/confidential events.

Publications

Summary of Scientific Impact

	All	Since 2019
# Publications	69	53
# Citations	14362	13388
h-index	30	30
i10-index	44	42

per Google Scholar, retreived on April 29th, 2024.

25 Journal Papers in eg. Nature Machine Intelligence, Nature Communications, Information Fusion, Pattern Recognition, Scientific Reports, Journal of Machine Learning Research and others.
26 Conference Papers in Proc. of eg. MICCAI, AAAI, CVPR, NeurIPS, ICIP, ICML, ICPR and others.
4 Book Chapters published.
14 Preprints published.