

MIHAIL STOIAN

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EDUCATION

University of Technology Nuremberg

PhD in Database Systems

Advisor: Andreas Kipf

Topic: Robust Query Processing

Nov. 2023-present

Nuremberg, Germany

Technical University of Munich

M.Sc. Elite Software Engineering

Passed with Honors (1.5/1.0)

Thesis: *Optimizing Linearized Dynamic Programming*

Supervisor: Thomas Neumann

Oct. 2021-Aug. 2023

Munich, Germany

Technical University of Munich

M.Sc. Informatics

Passed with High Distinction (1.2/1.0)

Thesis: *On the Optimal Linear Contraction Order of Tree Tensor Networks, and Beyond*

Supervisor: Christian Mendl

Oct. 2021-May 2023

Munich, Germany

Technical University of Munich

B.Sc. Informatics

Passed with High Distinction (1.2/1.0)

Thesis: *An Efficient Implementation of Polynomial-Time Join Ordering*

Supervisor: Thomas Neumann

Oct. 2018-July 2021

Munich, Germany

WORK EXPERIENCE

Applied Scientist Intern

Amazon Redshift

Learned Systems group

July 2023–Oct. 2023

Munich, Germany

Student Research Assistant

TUM, Chair for Database Systems

Umbra: A Flash-Based Database System with In-Memory Performance

Implementing, improving, and testing the functionality

Mar. 2019–Sept. 2023

Munich, Germany

Student Research Assistant

TUM, Chair for Data Analytics and Machine Learning

Graph learning with differential privacy

Jan. 2023–Sept. 2023

Munich, Germany

Research Assistant Intern

Oracle Labs

Graph-in-DB team

Aug. 2022–Oct. 2022

Zurich, Switzerland

Quantum Software Engineer Intern

Infineon Technologies

Quantum Algorithms group

Mar. 2021–May 2021

Munich, Germany

RESEARCH PROJECTS

NVIDIA Research

July 2022-Sept. 2023

Student Research Project

Remote

Einsum optimization on GPU

Advisor: Jean Kossaifi | Supervisor: Anima Anandkumar

TUM, Visual Computing & Artificial Intelligence Lab

Apr. 2022-Aug. 2022

Practical Course

Munich, Germany

Outcome: Twofold improvement over DCP, the deep learning approach for iterative closest point (ICP)

Advisor: Matthias Niessner

PUBLICATIONS

[Lightweight Correlation-Aware Table Compression](#)

Mihail Stoian, Alexander van Renen, Jan Kobiolka, Ping-Lin Kuo, Josif Grabocka, Andreas Kipf

3rd Table Representation Learning Workshop (TRL), 2024

[Unified Mechanism-Specific Amplification by Subsampling and Group Privacy Amplification](#)

Jan Schuchardt, **Mihail Stoian***, Arthur Kosmala*, Stephan Günnemann

37th Conference on Neural Information Processing Systems (NeurIPS), 2024

[On the Optimal Contraction Order of Tree Tensor Networks, and Beyond](#)

Mihail Stoian, Richard Milbradt, Christian B. Mendl

SIAM Journal on Scientific Computing, 2024

[Approximate Min-Sum Subset Convolution](#)

Mihail Stoian

22nd International Workshop on Approximation and Online Algorithms (WAOA), 2024

[DataLoom: Simplifying Data Loading with LLMs](#)

Alexander van Renen, **Mihail Stoian**, Andreas Kipf

Proceedings of the VLDB Endowment, Vol. 17, 2024

[Corra: Correlation-Aware Column Compression](#)

Hanwen Liu, **Mihail Stoian**, Alexander van Renen, Andreas Kipf

2nd Workshop on Cloud Databases (CloudDB), 2024

[Fast Joint Shapley Values](#)

Mihail Stoian

Student Research Competition, Companion of the International Conference on Management of Data, 2023

[Faster FFT-based Wildcard Pattern Matching](#)

Mihail Stoian

Student Research Competition, Companion of the International Conference on Management of Data, 2023

[Concurrent Link-Cut Trees](#)

Mihail Stoian

Student Research Competition, Proceedings of the International Conference on Management of Data, 2022

[PLEX: Towards Practical Learned Indexing](#)

Mihail Stoian, Andreas Kipf, Ryan Marcus, Tim Kraska

3rd International Workshop on Applied AI for Database Systems and Applications (AIDB), 2021

[Benchmarking Learned Indexes](#)

Andreas Kipf, Ryan Marcus, Alexander van Renen, **Mihail Stoian**, Sanchit Misra, Alfons Kemper, Thomas Neumann, Tim Kraska

Proceedings of the VLDB Endowment, Volume 14, 2021

[RadixSpline: A Single-Pass Learned Index](#)

Andreas Kipf, Ryan Marcus, Alexander van Renen, **Mihail Stoian**, Alfons Kemper, Tim Kraska, Thomas Neumann

3rd International Workshop on Exploiting AI Techniques for Data Management (aiDM), 2020

[SOSD: A Benchmark for Learned Indexes](#)

Andreas Kipf, Ryan Marcus, Alexander van Renen, **Mihail Stoian**, Alfons Kemper, Tim Kraska, Thomas Neumann

NeurIPS Workshop on Machine Learning for Systems, 2019

INVITED TALKS

What Selinger Forgot to Tell You About Query Optimization. Systems Group, TU Darmstadt, June 2024 (remote)

What do databases and tensor networks have in common? University of Jena, August 2023

INTERDISCIPLINARY PROJECTS

INSIGHT

Mar. 2022-Oct. 2022

Chair of Functional Materials (Prof. Peter Müller-Buschbaum)

Munich, Germany

Improved the performance of **INSIGHT**, the package used by the chair for X-ray measurements

Published in [Journal of Applied Crystallography](#).

PushQuantum

Apr. 2021-Aug. 2021

IQM Quantum Computers

Munich, Germany

[Organic-Q](#): Quantum simulations for OLED properties ([pitch](#))

PROGRAMMING COMPETITIONS

SIGMOD Programming Contest

Feb. 2022-Apr. 2022

ACM SIGMOD

Munich, Germany

We implemented a blocking system for Entity Resolution

[Ranking](#): 6th place, Team: HyTUM

TECHNICAL SKILLS

Languages: {
 "expert" : { C/C++, Python, SQL, Assembler }
 "advanced" : { Java, Isabelle, HTML/CSS/JS }
}

Frameworks: PyTorch, Spark

AWARDS

SIGMOD Student Travel Award

2023

Proposal: "Bridging the Gap Between Computational Fields"

Bronze Medal

2014

National Mathematics Olympiad, Romania

SCHOLARSHIPS

Deutschlandstipendium

Apr. 2022-Mar. 2023

Allianz SE

Munich, Germany

Scholarship awarded by the Ludwig Maximilian University of Munich

LANGUAGE SKILLS

Romanian: Native

English, German: C2

French: C1

Greek: A2