

MIHAIL STOIAN

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EDUCATION

University of Technology Nuremberg

PhD in Database Systems

Advisor: Andreas Kipf

Building *the* next-gen cloud database system

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

Solving NP-hard supply chain problems via Quantum Annealing

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

PREPRINTS

Mihail Stoian. [TSP Escapes the \$O\(2^n n^2\)\$ Curse](#), 2024 | TL;DR First improvement of Bellman's algorithm after 60 years.

Mihail Stoian. [Did Fourier Really Meet Möbius? Fast Subset Convolution via FFT](#), 2024

Mihail Stoian. [Sinking an Algorithmic Isthmus: \$\(1 + \epsilon\)\$ -Approximate Min-Sum Subset Convolution](#), *Submitted*, 2024

Hanwen Liu, **Mihail Stoian**, Alexander van Renen, Andreas Kipf. [Corra: Correlation-Aware Column Compression](#), 2024

Jan Schuchardt, **Mihail Stoian**^{*}, Arthur Kosmala^{*}, Stephan Günemann. [Group Privacy Amplification and Unified Amplification by Subsampling for Rényi Differential Privacy](#), *In submission*, 2024

Mihail Stoian, Richard Milbradt, Christian B. Mendl. [On the Optimal Contraction Order of Tree Tensor Networks, and Beyond](#), *In minor revision*, 2023

PUBLICATIONS

Mihail Stoian. [Fast Joint Shapley Values](#), Student Research Competition, *Companion of the International Conference on Management of Data, 2023*

Mihail Stoian. [Faster FFT-based Wildcard Pattern Matching](#), Student Research Competition, *Companion of the International Conference on Management of Data, 2023*

Mihail Stoian. [Concurrent Link-Cut Trees](#), Student Research Competition, advised by Jana Giceva, *Proceedings of the International Conference on Management of Data, 2022*

Mihail Stoian, Andreas Kipf, Ryan Marcus, Tim Kraska. [PLEX: Towards Practical Learned Indexing](#), *3rd International Workshop on Applied AI for Database Systems and Applications (AIDB), 2021*

Andreas Kipf, Ryan Marcus, Alexander van Renen, **Mihail Stoian**, Sanchit Misra, Alfons Kemper, Thomas Neumann, Tim Kraska. [Benchmarking Learned Indexes](#), *Proceedings of the VLDB Endowment, Volume 14, 2021*

Andreas Kipf, Ryan Marcus, Alexander van Renen, **Mihail Stoian**, Alfons Kemper, Tim Kraska, Thomas Neumann. [RadixSpline: A Single-Pass Learned Index](#), *3rd International Workshop on Exploiting AI Techniques for Data Management (aiDM), 2020*

Andreas Kipf, Ryan Marcus, Alexander van Renen, **Mihail Stoian**, Alfons Kemper, Tim Kraska, Thomas Neumann. [SOSD: A Benchmark for Learned Indexes](#), *NeurIPS Workshop on Machine Learning for Systems, 2019*

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

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

PROGRAMMING COMPETITIONS

SIGMOD Programming Contest

ACM SIGMOD

Feb. 2022-Apr. 2022

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"

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