Fabian H. Klopfer

CONTACT INFORMATION

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EDUCATION

University of Konstanz, Konstanz, Germany   **2015 - May 2021**
Department of Information and Computer Science
  B.Sc. Informatics.
    Thesis topic: Type Hierarchy Inference in Property Graph Databases.
  M.Sc. Computer & Information Science.
    Thesis topic: Data-locality Optimization in Graph Databases.

Eberhad Karls University, Tübingen, Germany   **Okt 2021 - May 2024**
Graduate Training Centre of Neuroscience
  M.Sc. Neural and Behavioral Science.
    Thesis Topic: Image-to-Image Translation of pc-bSSFP data to DWI Tensor.

RESEARCH EXPERIENCE

Database and Information Systems group, University of Konstanz, Konstanz, Germany
Research Assistant   **May 2019 - June 2020**
Implemented multi-level graph partitioning and clustering algorithms based on journal articles and conference papers into the graph database Neo4J using Java.

Research Scientist   **June 2021 - September 2021**
To evaluate different records storage orders on disk in graph databases, I programmed a graph database back-end in C along with utilities for downloading and importing SNAP datasets, re-ordering the graph records on disk and evaluating the effects on cache hits, access times and the sequentiality of reads.

Hertie Institute for Clinical Brain Research, Tübingen, Germany
Research Assistant   **September - November, 2022**
Implemented a local field potential analysis toolbox for multi-electrode arrays in Pyhton comparing wild type, epilepsy and migraine mouse models.

University Hospital, Tübingen, Germany
Research Assistant   **December 2022 - February 2023**
Developed a framework for data-driven biomarker discovery and evaluation using explainable AI methods for deep brain stimulation electrode implantation used to treat severe cases of Parkinson's disease, as well as improving the data analysis pipeline used to process terabytes of microel- and deep brain stimulation elctrode data for publications of the group. Helped with patient preparation and data analysis for correct electrode placement during deep brain stimulation implantations.

Max Planck Institute for Biological Cybernetics, Tübingen, Germany
Research Assistant   **March 2024 - May 2024**
Implemented quantitative MRI algorithms for calculating asymmetry index maps & estimating T_1 and T_2 maps from phase-cycle balanced steady-state free precession data along with an extensive pre-processing pipeline for terrabytes of MRI data.

TEACHING EXPERIENCE

University of Konstanz, Konstanz, Germany
Teaching Assistant in Theoretical Computer Science   **April - August, 2019**
Corrected assignment sheets & gave tutorials on formal languages, automaton theory, computability, decidability and complexity theory, as well as Q & A session on all of the previously mentioned before

the exams.

Teaching Assistant in Operating Systems   **October 2020 - March 2021**
Designed, sample-solved & corrected assignment sheets & exams, created & proof-read lecture and
tutorial slides, gave & recorded tutorials, managed lecture recordings.

University of Tübingen, Tübingen, Germany
Teaching Assistant in Neurophysiology   **April - August, 2019**
Gave tutorials for exam preparation of students, as well as a Q & A session with a focus on electro-
physiology.

INDUSTRY
EXPERIENCE

Hewlett-Packard Enterprise, Böblingen, Germany
Intern   **March - May, 2015**
Built an update and deployment tool using Python that dealt with different versions, modules and
licensing schemes.

Communication, Information & Media Center, Konstanz, Germany
Student Assistant   **March, 2016 - March, 2018**
Set up, maintained and installed switches, access points, servers and routers, provided second level
support and performed basic penetration testing.

OpenCog Foundation, Tsim Sha Tsui, Hong Kong
Intern   **May - September, 2018**
Evaluated hardware components for a social robot, wrote ROS drivers, fixed bugs in the OpenCog
ecosystem, wrote program integration utilities and other scripts in C, Python, Scheme.

Hanson Robotics, Tsuen Wan, Hong Kong and Remote
Research Assistant   **September - December, 2018**
Reviewed the comercial usability of large scale datasets, designed a multi-modal multi-task deep
learning-based robot perception system.

IBM Germany Research & Development GmbH, Böblingen, Germany
Software Engineer, Db2 Development   **November 2024 - present**
Implement features, improve performance and fix bugs in the BigSQL code base, that is an extension
of Db2 to support open table formats.

PUBLICATIONS   Baltabayev A, Gluschkow A, Blank J, Birkhölzer G, Büsche J, Kern M, Klopfer F, Mayer LM,
Scheibler G, Klein K, Schreiber F. Virtual reality for sensor data visualization and analysis. Elec-
tronic Imaging. 2018 Jan 28;30:1-8.

Layer N, Müller P, Ayash M, Pfeiffer F, Saile M, Klopfer F, Iavarone S, Santuy A, Fallier-Becker P,
Hedrich UB, Lerche H. Axonopathy and altered synaptic development in early hippocampal epilep-
togenesis of Dravet syndrome. bioRxiv. 2023 Oct 5:2023-10.

MEMBERSHIPS,
HONORS, AWARDS &
VOLUNTEERING

Honors & Awards: International Max Planck Research School Stipend, Hanson Fellowship
Volunteering: founder & speaker of student council of the Graduate Training Centre of Neuro-
science, University of Tübingen.

Relevant Lectures

Semiconductor Physics, Compiler Construction, Operating Systems, Signal Processing, Computer Systems
Neural Dynamics, Neural Coding, Learning and Memory, Neurophysiology, Cellular and Molecular Neuroscience, Functional Neuroanatomy, Sleep

Programming Skills

C	★★★★★
Python	★★★★★
PyTorch	★★★☆☆
C++	★★★☆☆
Rust	★★★★☆
Java	★★★★★
Shell	★★★★☆
LaTeX	★★★★★

Languages

German	★★★★★
English	★★★★★
French	★★☆☆☆
Spanish	★☆☆☆☆

Topics

Machine Learning	★★★★☆
Signal Processing	★★★★☆
Data Analysis	★★★★★
Computational Neuroscience	★★★★☆
Spiking Neuron Models	★★★☆☆
Electrophysiology	★★★★☆
Databases	★★★★★
Operating Systems	★★★★☆
Quantum Computing	★★☆☆☆

Soft Skills

Ownership	★★★★★
Organization & Coordination	★★★★★
Critical Thinking & Analysis	★★★★★
Adaptability	★★★★☆
Drive	★★★★★
Communication	★★★★☆
Conflict Resolution	★★★★☆
Creative Thinking	★★★★☆
Project Management	★★★★★