David Mödinger, PhD

Personal

- Email: david.moedinger@ketzu.net
- Phone: (+49) 177-299-1047
- Website ketzu.net

Linkedin - GitHub - Google Scholar

Work Experience

Everest Systems, Software Engineer, Heidelberg

Since January 2023.

- Led the technical design and development of key features, working closely with management and stakeholders to ensure alignment with business goals and efficient execution.
- Key achievements: Spearheaded the optimization of the installation process, reducing installation time by 60% (from 80min to 30min), significantly improving deployment efficiency and reducing support overhead.
- Key achievements: Developed and deployed a streamlined data transport solution, enhancing internal workflows and accelerating application deployment cycles, enabling faster and more reliable updates for customers.
- Collaborated with internal teams to support developers in writing migrations for structural changes, ensuring smooth transitions during updates and reducing development time.
- Organized team and discussion meetings during lead absence, providing guidance and support to junior developers, fostering a collaborative and productive working environment.

TeSolva GbR, Software Engineer, Fully Remote

March 2022 to January 2023.

- Led the end-to-end development of green-field features, delivering innovative solutions tailored to client needs.
- Enhanced and secured an in-house system by redesigning critical components, improving security and deployment capabilities.
- Collaborated closely with stakeholders to gather, define, and refine technical requirements, ensuring alignment with business goals.
- Mentored and guided junior developers, fostering their technical growth and enhancing overall team productivity.

Ulm University, Research Scientist, Ulm

August 2015 to July 2021.

- Developed multiple research prototypes both independently and in collaboration: Sorrir, netsim2, coinview, btcmon and pricloud.
- Conducted in-depth data analysis of real-world observations and simulation-based results such as eta-adaption, providing key insights into real-world systems for research and optimization.
- Authored and presented 15 peer-reviewed journal, conference, and workshop papers, showcasing innovative research. Full publications available at ketzu.net/science.
- Supervised and mentored 5 students in thesis projects, while hiring and managing over 20 research and teaching assistants annually, enhancing the department's research capabilities and improving academic outcomes.

Freelance Consulting and Development

Between December 2016 and December 2022.

- Collaborated closely with clients to gather and define project requirements, provide cost and time estimates, and deliver timely feedback, ensuring alignment with goals and expectations.
- Managed and maintained client web presences, providing regular updates, performance optimizations, and implementing scalable solutions to improve user engagement and site functionality.
- Designed, developed, and published multiple video games on platforms such as Steam, showcasing creativity and building technical expertise in game design and development.

Research Assistant

April 2014 to Octobre 2014.
Contributed Weak-Popov form matrix operations to the open-source python math system Sage.

Education

PhD/Doctorate, Ulm University, 2021

Institute for Distributed Systems.

Specialization in cryptography and data analysis for privacy protocols in peer-to-peer networks. Authored 15 peer-reviewed publications in journals and conferences, contributing to advancements in privacy-preserving technologies and distributed systems.
Key publications:

- 3P3: Strong Flexible Privacy for Broadcasts – IWCSS 2020
- Unobtrusive monitoring: Statistical dissemination latency estimation in Bitcoin's peer-to-peer network – PLOS One
- Statistical privacy-preserving message broadcast for peer-to-peer networks – PLOS One
- Pixy: A Privacy-Increasing Group Creation Scheme – ICNS

Masters in Computer Science, Ulm University, 2015

Focus on computer security with a minor in psychology. Developed a thesis on coding theory, which resulted in a published academic paper.

Bachelors in Computer Science, Ulm University, 2012

Minor in mathematics, with a strong foundation in computational theory and algorithms.

Skills

Languages

German: Native. English: Fluent. Korean & French: Basic.

Prgramming Languages

Proficient: Python, TypeScript, C++, JavaScript, Rust, Java, C#, SQL.

Software & Tools

Git. Docker, Kubernetes. Bash, Powershell. SQLite, Postgres. GitHub, GitLab, Traefik.

Frameworks

Django, HTMX, Axum, Vuejs, React.