

# David Mödinger, PhD

SOFTWARE ENGINEER · COMPUTER SCIENTIST

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## Work Experience

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### Autovia

Munich, Germany

PLATFORM ENGINEER

Jan. 2025 - Today

- Kubernetes maintenance and development of a data analysis cluster management software.

### Everest Systems

Heidelberg, Germany

SOFTWARE ENGINEER

Feb. 2023 - Dec. 2024

- 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

Fully Remote

SOFTWARE ENGINEER

Mar. 2022 - Jan. 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

Ulm, Germany

RESEARCH SCIENTIST

Aug. 2015 - Jul. 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](https://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.

### Sole Proprietor

Ulm, Germany

FREELANCE CONSULTING AND DEVELOPMENT

2016-2022

- 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.

### Ulm University

Ulm, Germany

RESEARCH ASSISTANT

Apr. 2014 - Oct. 2014

- Contributed weak-Popov form matrix operations to the open-source python math system Sage.

## Education

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### PhD in Computer Science

Ulm, Germany

INSTITUTE FOR DISTRIBUTED SYSTEMS

2021

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 Thesis Publications

2021	Statistical privacy-preserving message broadcast for peer-to-peer networks,	<i>PLOS One</i>
2020	3P3: Strong Flexible Privacy for Broadcasts,	<i>IWCSS 2020</i>
2020	Unobtrusive monitoring: Statistical dissemination latency estimation in Bitcoin's P2P network,	<i>PLOS One</i>
2018	A flexible network approach to privacy of blockchain transactions,	<i>ICDCS 2018</i>

## M.S. in Computer Science

*Ulm, Germany*

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.

## B.S. in Computer Science

*Ulm, Germany*

ULM UNIVERSITY

2012

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

## Skills

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### Languages

COMMUNICATION

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

### Programming Languages

PROFICIENT

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

### Software & Tools

IN DAILY USE

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

### Frameworks

Django, HTMX, Axum, Vuejs, React.