Tim **Kräuter**

Ph.D. candidate · Master of Science · Software Engineer

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Education

Ph.D. in Computer Science (anticipated completion October 2024) — *Bergen, Norway*

Western Norway University of Applied Sciences — *Oct. 2020 - Present*

- I am working as a Ph.D. student in model-driven software engineering. I research executable models, such as process models and state machines, to find control-flow errors or inconsistencies. As a result, one can find and fix errors early during development, preventing potential significant costs later in the development process.

Master of Science in Information Engineering — *Hanover, Germany*

FHDW Hanover — *Oct. 2018 - Apr. 2020*

- GPA: 4.0/4.0, Grade A
- I was studying part-time while working full-time as a Software Engineer at SET GmbH.
- Thesis: Development of semantics for the execution of production processes for the production management of the SET GmbH.

Bachelor of Science in Business Computing — *Hanover, Germany*

FHDW Hanover — *Oct. 2015 - Oct. 2018*

- GPA: 3.7/4.0, Grade A
- I was studying while working at VHV-Group.
- Thesis: Developing a framework for the automated testing of BPMN processes in the VHV.

Experience

Western Norway University of Applied Sciences — *Bergen, Norway*

Ph.D. Candidate in Software Engineering — *Oct. 2020 - Present*

- During my Ph.D. I developed many tools, mainly using **Java**, **JavaScript**, and **Rust**, as you can see in the projects below.
- I contributed to open-source projects in the **bpmn-js** ecosystem, such as *bpmn-lint*, *bpmn-js-token-simulation* and *diagram-js*.
- I was a lecturer and teaching assistant in a course about **Android development** and **Advanced Software Technologies**, i.e., system integration using web services, shared databases and messaging. The programming languages used were **Java** (back-end) and **JavaScript** (front-end).

SET GmbH — *Hanover, Germany*

Software Engineer — *Oct. 2018 - Oct. 2020*

- I was part of a team **redesigning** the company's old production management system in **Java**. Before that, we implemented an Android app for one of our customers as a hybrid app based on web technologies. The app is vital to the letter production process and ensures the correct production of thousands of letters daily.

VHV-Group — *Hanover, Germany*

Student Intern — *Oct. 2015 - Oct. 2018*

- Dual course of study while acquiring a bachelor's degree in business computing. I mainly worked with **Java** to extend the testing framework for our business processes implemented with the Camunda Workflow Engine and automate GUI regression testing with Selenium.

Skills

Languages	German (native), **English** (fluent), **Norwegian** (fluent), **French** (semi-fluent)
Programming	**Java** (Spring, Gradle, Maven), **Typescript & JavaScript** (Angular, Ionic, HTML, CSS, bpmn-js), **Rust** (axum, tokio)
Programming Concepts	**Version Control**, **Concurrency**, **OOP**, **CI/CD** (GitHub Actions, Jenkins), **Containerization** (Azure, GCloud)

Projects

BPMN Analyzer 2.0 — *Bergen, Norway*

Research project — *Nov. 2023 - PRESENT*

- I implemented an **analyzer** in **Rust** to automatically **find, display and fix control-flow errors** in a BPMN model by exploring all possible states.

Visual Debugger — *Bergen, Norway*

Research project — *May. 2021 - PRESENT*

- I developed an **IntelliJ IDEA plugin** which **visualizes the variables during debugging** as an object diagram which has over **10.000 downloads**.

Smart CoP — *Hanover, Germany*

Personal project — *Dec. 2019 - PRESENT*

- I created an **Android app** and a **progressive web app** for gymnastics, which automatically calculates the difficulty score for gymnastic routines.