

LUKAS PETERMANN

Magdeburg, DE

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EDUCATION

M.Sc. Computer Science , Otto-von-Guericke University, Magdeburg	Oct. 2024 - Exp. 2025
M.Sc. Computer Science , Karlsruhe Institute of Technology, Karlsruhe	2023 - Sep. 2024
B.Sc. Computer Science , Otto-von-Guericke University, Magdeburg	2018 - 2023
Thesis: <i>Comparison of Real-Time Plane Detection Algorithms on Intel RealSense¹, 1.0</i>	
A Levels , Herderschule Rendsburg	2008 - 2017

SKILLS

Technical Skills	Python, C++, Git, Flask, NumPy, Open3D, Linux, Kotlin, Jetpack Compose, Heimdall, OpenFGA, Apache Kafka
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EXPERIENCES

Working Student Software Development SoftwareBees GmbH	Apr. 2024 - Today <i>Krebeck, DE</i>
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- Vicus: The mobile app to digitalize living in communities.
 - Developed the front-end using Jetpack Compose
 - Designed the middle-end using a combination of heimdall² and OpenFGA³
 - Implemented the backend using Ktor in a hexagonal architecture.
- Integrated the text extraction (see *Freelancing Work*) into a kafka pipeline and added a prior document splitting step.

Research Assistant Karlsruhe Institute of Technology, Steinbuch Centre for Computing	Apr. 2023 - Sep. 2023 <i>Karlsruhe, DE</i>
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- Developed and maintained the *OpenFOAM Benchmark Runner* (OBR)⁴ in Python.

Summer Intern The Mathworks GmbH, Parallel Computing Team	Oct. 2023 - Nov. 2023 <i>München, DE</i>
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- Implemented sparse triangular preconditioners for GPU iterative solvers.
- Improved the performance of GPU sparse `mldivide` using `cuSPARSE`.

Research Assistant Otto-von-Guericke University, Department of Software Engineering	Jan. 2021 - Mar. 2024 <i>Magdeburg, DE</i>
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- Implemented a time- and memory-efficient version of RSPD⁵ in Python.
- Designed a simulator for SLAM algorithms in Python.
- Implemented a 3D-Minimap within the context of an AR Unity app in C#.

Intern LIVEDAB GmbH	Aug. 2020 - Dec. 2020 <i>Hamburg, DE</i>
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¹Bachelor Thesis

²Heimdall

³OpenFGA

⁴OBR

⁵RSPD

- Developed new features within a filter marketing platform using Typescript and React.
- Designed a RESTful API and database model using PostgreSQL.

Working Student Software Development

BM Sports Technology GmbH

Oct. 2019 - Dec. 2019

Magdeburg, DE

- Extended the User-Interface of an iOS app using SwiftUI.
- Implemented real-time visualization of sensor data using SwiftUI.

FREELANCING WORK

SoftwareBees GmbH

Feb. 2024 - Mar. 2024

- Developed automatic extraction of textual data using Python, Tesseract, and OpenCV with a 90% success rate.

XCO-FDK

Mar. 2023 - Jun. 2023

- Developed automatic Code Generation using Python and Jinja2.
- Set up semi-automatic continuous documentation using Python and Sphinx.

JD-Software

Aug. 2023

- Co-created a Spring-Boot development guide.

SOFTWARE

RSPyD⁶ Self-implementation of RSPD⁵ in Python with focus on efficiency.

CYK Validator⁷ Application that transforms a context-free grammar into Chomsky-Normalform and reports all substrings of a given word that can be generated by said grammar.

OBRG-Py⁸ A Python implementation of the *Octree-based Region Growing* (OBRG)⁹ plane detection algorithm as part of my bachelor thesis.

CERTIFICATES

Node Level Performance Engineering

High-Performance Computing Centre Stuttgart

June 2023

Stuttgart, DE

EXTRA-CURRICULAR ACTIVITIES

High-Performance Computing Status Conference Attendee

Karlsruhe Institute of Technology

June 2023

Karlsruhe, DE

Student council member of the Faculty of Computer Science

Otto-von-Guericke University Magdeburg

Sep. 2020 - Mar. 2021

Magdeburg, DE

LEADERSHIP

Organized the mentoring program at the Faculty of Computer Science.

Otto-von-Guericke University Magdeburg

Sep. 2020 - Mar. 2021

Magdeburg, DE

⁶RSPyD

⁷CYK

⁸OBRG-Py

⁹OBRG