LUKAS PETERMANN

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EDUCATION

M.Sc. Computer Science Karlsruhe Institute of Technology, Karlsruhe — 2023 - Exp. April 2025

B.Sc. Computer Science, Otto-von-Guericke University, Magdeburg — 2018 - 2023
Thesis: *Comparison of Real-Time Plane Detection Algorithms on Intel RealSense*[1]*, 1.0*

A Levels, Herderschule Rendsburg — 2008 - 2017

SKILLS

Technical Skills	Python, C++, Git, Flask, NumPy, Open3D, Linux
Soft Skills	Communication, Time Management, Logical Thinking

EXPERIENCES

Working Student Software Development — Apr. 2024 - Today
SoftwareBees GmbH — *Krebeck, DE*

Research Assistant — Dec. 2023 -Mar. 2024
Karlsruhe Institute of Technology, Steinbuch Centre for Computing — *Karlsruhe, DE*

- Continued to develop new features for OBR.

Summer Intern — Oct. 2023 - Nov. 2023
The Mathworks GmbH, Parallel Computing Team — *München, DE*

- Implemented sparse triangular preconditioners for GPU iterative solvers.
- Improved the performance of GPU sparse `mldivide` using cuSPARSE.

Research Assistant — Apr. 2023 - Sep. 2023
Karlsruhe Institute of Technology, Steinbuch Centre for Computing — *Karlsruhe, DE*

- Developed and maintained the *OpenFOAM Benchmark Runner* (OBR)[2] in Python.

Research Assistant — Jan. 2021 - Feb. 2023
Otto-von-Guericke University, Department of Software Engineering — *Magdeburg, DE*

- Implemented a time- and memory-efficient version of RSPD[3] 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 — Aug. 2020 - Dec. 2020
LIVEDAB GmbH — *Hamburg, DE*

- 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 — Oct. 2019 - Dec. 2019
BM Sports Technology GmbH — *Magdeburg, DE*

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

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[1] https://github.com/lupeterm/Thesis/blob/master/Document/main.pdf
[2] https://github.com/hpsim/OBR
[3] https://www.inf.ufrgs.br/õliveira/pubs_files/RE/RE.html

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

RSPyD[4] Self-implementation of RSPD[3] in Python with focus on efficiency.

CYK Validator[5] 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-Py[6] A Python implementation of the *Octree-based Region Growing* (OBRG)[7] plane detection algorithm as part of my bachelor thesis.

CERTIFICATES

Node Level Performance Engineering   June 2023
High-Performance Computing Centre Stuttgart   *Stuttgart, DE*

EXTRA-CURRICULAR ACTIVITIES

High-Performance Computing Status Conference Attendee   June 2023
Karlsruhe Institute of Technology   *Karlsruhe, DE*

Student council member of the Faculty of Computer Science   Sep. 2020 - Mar. 2021
Otto-von-Guericke University Magdeburg   *Magdeburg, DE*

LEADERSHIP

Organized the mentoring program at the Faculty of Computer Science.   Sep. 2020 - Mar. 2021
Otto-von-Guericke University Magdeburg   *Magdeburg, DE*

[4]https://github.com/lupeterm/RSPyD
[5]https://github.com/lupeterm/CYK
[6]https://github.com/lupeterm/OBRG-Py
[7]https://www.sciencedirect.com/science/article/pii/S0924271615000283