



Lars Melchior

Physicist | Entrepreneur | Full Stack Engineer

Let's change the world together!

PROFESSIONAL EXPERIENCE

Since 2022 **Team Lead Software at Diamontech**

As software team lead at Diamontech I'm helping develop a medical device for non-invasive blood sugar measurements, improving the lives of diabetics worldwide. I'm engaged in all areas of development from embedded firmware to full stack app and web development. Technologies used: C++ / CMake / Python / TypeScript / Node.js / Express.js / PostgreSQL / React / React Native etc. ([Diamontech.de](https://diamontech.de))

2021 - 2022 **Experimental Physicist at DeepSpin**

At DeepSpin I played a key role in developing and building the full-stack infrastructure for AI driven MRI experiments. I worked on both software and hardware and introduced high quality software development practices for the ML team. My main stack included Python / PyTorch / Flask / TypeScript / React / C++ etc. (deepspin.io)

Since 2020 **Full Stack Engineer and Consultant (independent and for Toptal)**

I performed contract work for various clients both on-site in Berlin and fully remote through the elite freelancer platform Toptal. Through this I've become very familiar with many popular stacks including Python / TypeScript / JavaScript / Objective C / Java / Node.js / MongoDB / PostgreSQL / React / React Native etc. (toptal.com/resume/lars-melchior)

Since 2018 **Founder and CEO at Edutapps GmbH**

I founded Edutapps right after my studies and secured funding through EXIST, a business angel and an accelerator program. I was also head of development, responsible for all tech decisions and leading the technical team to build the math app Maphi. Maphi uses a game and algebra engine we built from scratch using many technologies including C++ / CMake / OpenGL / TypeScript / Lua / Objective-C / Java / React / React Native / Firebase etc. (maphi.app)

Since 2014 **Open Source Contributor and Developer**

Since starting programming I've built an extensive open-source portfolio on GitHub, reaching thousands of developers. I've built the ModernCPPStarter, a wildly popular C++ starter project, and CPM.cmake, a dependency manager that is used by many projects, including some by NVIDIA and Microsoft. (github.com/TheLartians)

2011 - 2017 **Student Assistant at University of Göttingen (multiple positions)**

During my studies I worked as a student assistant in various positions, including tutoring mathematics and programming classes to physics students and building scientific software. Among others I built a C++ / Python framework for high-performance simulation of x-ray propagation that is still in use today.

2010 **Released first commercial Apps on the Mac App Store**

Shortly after getting into programming I created and released the paid scientific apps 'LarsPlot' and 'Fit' on the Mac App Store. These were built in C++ and Objective C using the Quartz2D and Cocoa frameworks.

EDUCATION

2013 - 2017 **M.Sc. Physics at Georg-August-Universität Göttingen Focus on Biophysics (Grade 1.2 with distinction)**

In my thesis 'Numerical methods for paraxial stationary and time-dependent propagation of x-ray and EUV radiation' I developed novel algorithms for high-performance simulation of time-dependent EM wave propagation. It received the highest possible grade 1.0 (comparable to A+). While working on the thesis, I've co-authored multiple publications in peer-reviewed scientific journals. ([full thesis](#))

2013 - 2014 **Erasmus Exchange at the Universidad de La Laguna, Canary Islands, Spain**

I've spent the first year of my M.Sc at La Laguna, where I focussed on deepening my knowledge of Astrophysics. Here I spent nights collecting data at the ORM observatories and wrote tools to automatically process astronomical data using Python.

2009 - 2013 **B.Sc. Physics at Georg-August-Universität Göttingen**

In my bachelor's Thesis 'Evolution of Synaptic Plasticity using Genetic Algorithms in Neural Closed-Loop Systems' I developed novel algorithms for artificial evolution of computer programs for training neural networks in C++. The thesis received the highest possible grade 1.0 (comparable to A+). ([full thesis](#))

OTHER

2021 **Participated in the EF-BE7 Cohort of Entrepreneur First (EF)**

EF funds individuals to help build co-founding teams, develop ideas, and accelerate through fundraising from the world's best investors. While I didn't end up founding my own company during the program, I discovered DeepSpin, a company that was founded during a previous cohort. (joinef.com)

2019 **Winner of the Innovation Track at the Global EdTech Startup Awards**

I won the innovation track of the international pitching competition in London for presenting my startup Maphi. (gloaledtechawards.org/winners2018)

For an up to date version of this document, please see thelartians.de/cv.

Languages

German (native)
English (native)
Spanish (basics)

Stack highlights

C++
CMake
Firebase
Flask
GLSL
GraphQL
JavaScript / TypeScript
Jupyter Notebooks
Lua
Node.js / Express.js
Numpy / Scipy / Matplotlib
Objective-C
OpenGL
PostgreSQL
PyTorch
Python
React / React Native
Rust
TensorFlow
WebAssembly

Scientific expertise

Astrophysics
Biophysics
Computational Physics
General Physics
Theoretical Neuroscience
X-Ray Optics

Other interests

Guitar
Piano
Rock climbing
Filmmaking

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