



Victor Bieszka

Curriculum Vitae

PERSONAL

<i>Birthday</i>	06.12.1991
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EDUCATION

Master Computer Science 2021 - 2023
Technische Universität Berlin

- Specialisation: Compiler design and database management systems
- Thesis: "Towards the Fast and Secure Execution of User-Defined Functions in Stream Processing Engines"

Bachelor Computer Science 2014 - 2021
Technische Universität Berlin

- Specialisation: Distributed systems and cloud/network technologies
- Member of TU Berlin's competitive programming team
- Thesis: "Evaluating the influence of the ORTC algorithm on network reachability computation and space complexity using binary decision diagrams"

Bachelor Economics 2011 - 2014
Universität Mannheim

- Secondary: Business administration
- Member of Arbeitskreis Börse
- Thesis: "An Analysis of Stock Reports when Financial Analyst's Incentives are Uncertain"

Abitur 2002 - 2010
Katholisches Gymnasium Sankt Ansgar in Hamburg

WORK EXPERIENCE

IoT Engineer - Freelance Since 01.06.2023
IT & Kommunikation Meißner

- Developing a data aggregation and visualization platform for the IoT on resource-restricted hardware
- Focusing on wireless connections between Shelly sensors and NAS-Systems
- Working with a small team of developers doing the Backend as well as the Frontend
- We were able to already gain multiple customers for our product

Compiler Engineer

Since 01.01.2023

NebulaStream & Database and Information Systems Department, TU Berlin

- Continue my work as a compiler engineer for the IoT stream processing engine *NebulaStream* and spearheading the virtualization stack
- Mostly extending the query compiler, doing bug fixing, code reviewing and training new developers
- Exploring inter-virtual-machine shared memory for polyglot queries using QEMU and rust-vmm
- Currently in the process of publishing a research paper about secure query execution using shared-memory VMs

React Native Developer - Freelance

Since 01.01.2019

Stiftung Berufliche Bildung

- Work as a React Native freelance developer
- Developed and actively maintain the *JBH Chat* app
- Published the app on both iOS and Android stores

Database & Compiler Engineer

01.07.2021 - 01.01.2023

Deutsches Forschungszentrum für Künstliche Intelligenz

- Developer for the IoT stream processing engine *NebulaStream* and responsible for the virtualization/containerization stack
- Worked on secure and efficient execution of user-defined functions and polyglot queries, focusing on Rust and Python
- Co-developed the query compiler framework *Nautilus* and a specialized IR with LLVM/MLIR
- I am the author of a WebAssembly query compiler for secure query execution

Software Engineer

01.07.2020 - 31.07.2021

German-Turkish Advanced Research Centre

- Project lead for the ongoing research project *Panderam*
- Oversaw a small team of software engineers
- I was also responsible for DevOps and the Kubernetes cluster
- Successfully delivered a first prototype
- I was also a developer for *Cosy*, a novel project to apply AI methods for predicting cyber threats and calculating responses to reduce potential risks and damages

Working Student

01.06.2018 - 30.06.2020

Distributed Artificial Intelligence Laboratory

- Collaborated on security research projects *Androlyzer* and *AndProtect*
- Developed the research project *Radar*, a novel intrusion detection system
- Co-developed the open source project *AppPETs*, a security library for Android apps
- Helped preparing and giving lectures on security and distributed systems

Junior Database Engineer - Internship

01.08.2016 - 31.10.2016

Index Research GmbH

- Responsible for the internal SQL database
- Wrote queries for different departments

Junior Software Engineer - Internship

01.07.2015 - 30.11.2015

Airy Inc.

- Supported the development of Android applications
- Delivered a first prototype and helped transitioning towards a data streaming infrastructure for real-time data services

Community service

01.10.2010 - 30.06.2011

Caritas Sozialstation Hamburg

SKILLS

Languages

German (first language)
 Polish (first language)
 Englisch (fluent, C1)
 Spanisch (basic, B1)

Programming languages

C/C++, Rust, Python, Java

Software

Git, Webassembly, React Native, Google Cloud, QEMU
 LLVM/MLIR, cloud-hypervisor, firecracker, L^AT_EX