

Zur Vonarburg-Shmaria

SENIOR SOFTWARE ENGINEER

zurshmaria.ch | [linkedin](#) | [blog](#) | [github](#) | [researchgate](#) | [google scholar](#)

Interests: full stack, software architecture,DDD, microservices, data engineering, algorithms, high performance computing, blockchain/DLT

Info: born 1995, swiss citizen, currently employed at ti&m AG (full time), father of two

Open source projects: [signalstory](#), [ngx-signal-immutability](#), [GraphMineSuite](#), [PAPIW](#),

EDUCATION

ETH Zurich

BSc ETH CS (BSc ETH Inf.-Ing)

Thesis: Towards High-Performance Clique Mining

Zurich

2016 - 2020

Kantonsschule Seetal

Matura

Baldegg, Lucerne

2008 - 2014

EXPERIENCE

Senior Software Engineer at ti&m

ti&m AG

10/2021 - Present

Altstetten, Zurich

- Multiple projects for various external customers, usually in the role of team lead, architect or full stack developer
- Implementing and advising internal and external data engineering projects in the cloud and on premise (Data lakehouse, Azure Synapse, Google Dataproc, Superset, Airflow, Kafka, Spark, Hadoop)
- Most significant Project: Team Lead, Software Architect and Full stack developer in a large sized web app (since Dec 2021, 4 developers + 1 UI/UX Designer; MVP delivered after 2 months). Keywords: Microservices, Apache Kafka, CQRS, Event-driven, Domain-driven, Test-driven, C#, ASP.NET Core, Angular, NGRX, Postgres, XUnit, Cypress, Cloud Foundry, Prometheus, Grafana, Splunk, Azure Devops, Scrum

Software Developer at Auto-i-Dat

Auto-i-Dat AG (20%-30% until 2020, full time since April, 2020)

11/2017 - 10/2021

Wollishofen, Zurich

- Developed multiple REST APIs, Angular web apps, some lightweight WPF desktop apps and participated in the development of an enterprise application based on Blazor WebAssembly in a scrum-like team
- Responsible for Auto-i-Dat Involvement in the Cardossier project (based on Corda, distributed ledger technology), including Google cloud/Kubernetes maintenance, ETL processes, Proxy/Facade Applications, etc.
- Analysed and improved database ecosystems and data driven applications

Research with Dr. Maciej Besta

And other researchers from the Scalable Parallel Computing Laboratory (SPCL)

08/2019 - 10/2021

ETH Zurich

- Improved state-of-the-art on parallel maximal clique listing algorithms (on average 1.92x faster than competitors)
- Contributed significantly to the enhancement of parallel graph coloring and degeneracy vertex reordering
- Core developer of GraphMineSuite, a benchmark and design framework for graph mining problems
You may find more information about this open source project under <https://graphminesuite.spcl.inf.ethz.ch/>

Teaching Assistant

Introduction to programming, Prof. Dr. Thomas Gross

Java-Based OOP-Course

08/2018 - 12/2019

ETH Zurich

TECHNICAL SKILLS

Languages: C#, C/C++, Java, Python, SQL, JavaScript/Typescript, HTML, CSS/Sass, Haskell, R

Frameworks/Libs: ASP.NET Core, Angular, Blazor, Entity Framework, React, WPF, Flask, Spring, XUnit/JUnit, Apache Spark, Shared-Memory Parallelization Frameworks (OpenMP, Intel TBB, Cilk, TPL), MPI

Infrastructure: MS SQL, PostgreSQL, EventStoreDB, Kubernetes, Docker, Apache Kafka, Hadoop, RabbitMQ, Azure, Google Cloud, AWS, Corda

Tools: Visual Studio/VS Code, Git, TFS, PyCharm, IntelliJ, Eclipse, Intel Advisor, Valgrind

OS: Linux (preferably Ubuntu), Windows

PUBLICATIONS

- GraphMineSuite** | 2nd author, *Accepted to VLDB'21 conference/PVLDB Vol 14 journal* 2021
Enabling High-Performance and Programmable Graph Mining Algorithms with Set Algebra
Maciej Besta, Zur Vonarburg-Shmaria, Yannick Schaffner, Leonardo Schwarz, Grzegorz Kwasniewski, Lukas Gianinazzi, [...], Torsten Hoefer;
In Proceedings of the 47th International Conference on Very Large Data Bases
arXiv:2103.03653 [cs.DC] 2021 (<https://arxiv.org/pdf/2103.03653.pdf>)
- Parallel Graph Coloring** | 3rd author, *Accepted to SC20 conference (Acceptance rate 25%)* 2020
High-Performance Parallel Graph Coloring with Strong Guarantees on Work, Depth, and Quality
Maciej Besta, Armon Carigiet, Zur Vonarburg-Shmaria, Kacper Janda, Lukas Gianinazzi, Torsten Hoefer;
In Proceedings of the IEEE/ACM International Conference on High Performance Computing, Networking, Storage and Analysis
arXiv:2008.11321 [cs.DC] 2020 (<https://arxiv.org/pdf/2008.11321.pdf>)
- SISA** | Intermediate contribution, *Accepted to MICRO'21 conference* 2021
Set-Centric Instruction Set Architecture for Graph Mining on Processing-in-Memory Systems
Maciej Besta, Raghavendra Kanakagiri, Grzegorz Kwasniewski, Rachata Ausavarungnirun, Jakub Beránek, Konstantinos Kanellopoulos, Kacper Janda, Zur Vonarburg-Shmaria, [...], Onur Mutlu, Torsten Hoefer;
Proceedings of the 54th IEEE/ACM International Symposium on Microarchitecture
arXiv:2104.07582 [cs.DC] 2021 (<https://arxiv.org/pdf/2104.07582.pdf>)

ACHIEVEMENTS & SKILLS

- Swiss Army** | *Specialist Officer (Captain)* 2015 – Present
- *Staff Officer of computer science (since 2018)*
I'm responsible for the military executive information system of our battalion (≈ 1000 soldiers).
This includes planning and deploying radio transmission means to ensure coverage of data/voice services.
 - *Quartermaster Sergeant of a rescue unit (2015 - 2017)*
I was responsible for back office, finance and food in a rescue company (≈ 200 soldiers)
 - *Higher Non-commissioned officers school (2015)*
Acquired leadership and planning skills and trained perseverance
- B1 drivers license** since 2016
- English: C1 Advanced (CAE)** | *Victoria, Canada* 2015
- French: Intermediate** | *Matura (equivalent to B2 Level)* 2014
- German: First Language** since birth
- Hebrew: Only speech** since birth