Vaibhav **Kulkarni**

Software Engineer (Data Engineering | Machine Learning | Information Security) · PhD - Information Systems
Lausanne - Switzerland

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Work Experience

Debiopharm
Lausanne, Switzerland
Data Engineering Lead
July 2022 - Present
- Architect & implement a validated enterprise-data-warehouse solution to collect-harmonize-process clinical data
- Build an entity-extraction & search engine to construct knowledge-graphs & perform trend-monitoring & analysis

SOPHiA Genetics
Lausanne, Switzerland
Senior Data Engineer
April 2021 - June 2022
- Scalable infrastructure development for optimal extraction, transformation, & loading of large-complex datasets
- Analytical tool development for data-pipelines to provide actionable insights into business performance metrics
- API & CLI tools development to expose database functionalities; Formal specification write-ups for requirements

GenLots SA
Lausanne, Switzerland
Software Engineer | Research & Development Lead
Sept. 2019 - Mar. 2021
- Implemented & scaled microservices-based architecture to ingest & serve client data to our production ML service
- Optimized(C/C++ bindings) & removed bottlenecks in the machine-learning service, shipped end-to-end features
- Developed reporting & logging tools to automate client delivery services, Led & supervised industrial R&D projects

Distributed Object Programming Lab
Lausanne, Switzerland
Research Scientist
Nov. 2015 - Aug. 2019
- Implemented an infrastructure to load high-frequency streaming public transport ridership data to a relational DB
- Implemented a supervised ML-based service to minimize ticket-free riding on Lausanne public transport network
- Led a large-scale open geospatial data collection campaign; Worked with the team to implement backend system

ETH Zürich
Zürich, Switzerland
Project Intern
Jan. 2015 - Aug. 2015
- Implemented software-defined-radio based platform to generate repeatable & controllable interference patterns
- Deployed the platform on open IoT testbeds; Designed tools & APIs to control & perform automated benchmarking

BOLT IoT
Goa, India
Embedded Systems Engineer
Aug. 2011 - Aug. 2013
- Designed & optimized PCB layouts of embedded platforms for robotics & IoT applications; Set-up testing strategies
- Implemented tools & applications to benchmark platform performance; Led client support & troubleshooting teams

Education

University of Lausanne
Lausanne, Switzerland
PhD, Information Systems/Computer Science
Nov. 2015 - Aug. 2019

Technische Universiteit Eindhoven
Eindhoven, Netherlands
MS, Embedded Systems (Graduated with Cum Laude)
Aug. 2014 - Aug. 2015

Technische Universität Berlin
Berlin, Germany
MS, Information & Communication Technology
Feb. 2013 - Aug. 2014

Goa University
Goa, India
BS, Electronics & Telecommunication Engineering (Graduated with Honours)
Aug. 2008 - Jun. 2012

Skills & Competencies

- **OO-Programming, Scripting, Test-driven Development:** Java, Python, C/C++, Bash (6 years); Scala, Javascript (3 years); JUnit, pytest
- **Database Development:** SQL, PostgreSQL, MySQL (5 years); SQLite, MongoDB, Redis, Elasticsearch (2 years), pgAdmin (debugging tools)
- **Microservices-driven Architecture:** Docker-compose, Kubernetes, RabbitMQ, Kafka, Flask, Spring, Jersey, Airflow, AWS, Azure (4 years)
- **Observability, Logging, CI/CD:** Elasticsearch-Kibana-Logstash stack (2 years); Setting Gitlab/Jenkins/Bitbucket CI/CD pipelines (3 years)
- **ML & Data Science Stack:** NumPy, SciPy, pandas, Dask, scikit-learn, TensorFlow, Keras, R (4 years), Apace Spark/Spark streaming (2 years)
- **Version Control & Data Visualisation:** Git, SVN, Jetbrains Toolbox (6 years); matplotlib, seaborn, Tableau, D3, deck.gl, Folium (4 years)
- **Languages**: English (Fluent), French (working proficiency), German (elementary proficiency), Hindi (Fluent), Marathi & Konkani (Native)