Charles Moatti

Birmensdorferstrasse 317, 8055, Zürich, CH   Nationalities: Swiss and French
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Physicist and Engineer with broad multidisciplinary experience in software engineering, embedded systems, and machine learning. Passionate about diving into new topics and learning new skills, I enjoy tackling complex challenges and delivering efficient solutions.

Work Experience

Software Engineer   Nov 2023-Present
Sumex AG, Zürich, Switzerland
- Design, implement, and maintain claims processing software systems for the Swiss healthcare sector
- Technical lead for several backend features, while contributing to frontend and architectural design
- Tech stack: Java, Spring, Angular, SQL, Docker, Kubernetes

Master Thesis - Computer Vision Engineer   Mar 2022-Nov 2022
University Children's Hospital, Zürich, Switzerland
- Designed and implemented state-of-the-art neuronal network segmentation algorithms (nnU-Net, MONAI) for fetal and infant brain segmentation
- Tech stack: Python, PyTorch, Pandas, Plotly, Git

Semester project - Embedded Software Engineer   Sep 2021-Dec 2021
Center for Project-Based Learning, D-ITET, ETH Zürich, Zürich, Switzerland
- Evaluated RTK-capable GNSS modules for sub-meter localization in the Smartrail 4.0 program
- Developed embedded software in C; analyzed data in Python

Machine Learning Intern - R&D   Mar 2021-Aug 2021
greenTEG, Rümlang, Switzerland
- Modeled time-series data using deep neural networks to predict core body temperature from sensor readings, deployed on the CORE microprocessor
- Tech stack: Python, PyTorch, C, Linux, Git

Education

MSc, Electrical Engineering and Information Technology   2019-2022
ETH Zürich, Zürich, Switzerland
CGPA : 5.21/6.00
- Focus at the intersection of software engineering, machine learning and hardware architecture

BSc, Honours Physics   2015-2019
McGill University, Montreal, Canada
CGPA : 3.80/4.00
- Bachelor's Thesis: developed real-time software to quantify the RFI environment of the CHIME/FRB pipeline and remove it using statistical methods

Publications

- C. Steger, C.Moatti et al., Characterization of dynamic patterns of human fetal to neonatal brain asymmetry with deformation-based morphometry, *Frontiers in Neuroscience*, 2023
- D. Mikhaylov, C. Moatti et al., Toward the Future Generation of Railway Localization Exploiting RTK and GNSS, *IEEE Transactions on Instrumentation and Measuremen*t, 2022
- CHIME/FRB Collaboration (incl. C. Moatti), Detection of Fast Radio Bursts at Radio Frequencies down to 400MHz, *Nature*, 566, 2019
- CHIME/FRB Collaboration (incl. C.Moatti), A Second Repeating fast radio burst source*, Nature,* 2019

Languages

- French: Native   - English: Fluent   - German: Advanced   - Italian: Intermediate

Computer skills

Java, Python, C, JavaScript, Angular, Bash, Git, Docker, Django, SQL, HTML, CSS, Microsoft Office