Furrer **STANISLAS**

Machine Learning Engineer | Data Scientist | ETHZ • EPFL

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Experienced Data Scientist **(+2.5Years)** with a strong foundation in deploying **industry-level machine learning solutions**, gained from diverse roles at **Credit Suisse** and **Logitech**, and innovative **Start-ups**. Rich background in research, evidenced by contributions to significant projects at university lab like **ETHZ** and **EPFL**. Skilled in bridging the gap between data science and domain expertise. Interested in productizing **robust** and **optimized ML/Data solutions** and improve **deep-learning models.**

I strive to collaborate and translate research findings into **business impact**.

Skills

Languages	**Proficient :** Python, Pyspark **Good :** C/C++, SQL, HTML, CSS
Machine Learning Framework	**Proficient :** PyTorch (Lightning) **Good :** TensorFlow, Keras, Scikit-Learn, Hugging Face
GPU/CPU Computing	SLURM, Kubernetes, DistributedDataParallel (DDP)
Cloud / Framework	AWS, Azure, Palantir
Developer Tools	Docker, Git, Jira, Databricks, bash/UNIX, Jupyter Hub, VS Code, Weight & Biases

Work Experience

Personal Website

Data Scientist | Credit Suisse — Feb 2022 - Today

- Developed production data pipelines and analysis in Python/Pyspark bolstering Hedge Fund Investment strategies.
- Developed production LLM models (NER, Information Retrieval, Search,..), guiding over 50+ collaborators' daily investments.
- Speed-up inference of Deep Learning models through Quantization, ONNX representation and Triton Inference Server.
- Collaborated with project managers to pinpoint KPIs and optimize data pipeline, accelerating alert/report generation.
- Boosted MLOps culture, with iterative improvement via constant feedback monitoring, data analysis, and rigorous CI/CD.
- Acted as Deputy Tech Lead and Agile Team Delegate, steering CI/CD cycle and learning for 10+ developers.

PyTorch | Python | Docker | Apache Spark | Git | Jira | Cloud Computing | NLP | MLOps | GPUs | Kubernetes

Machine Learning Research Assistant | EPFL-LASA — Feb 2021 - June 2021

- Designed an LSTM/CNN algorithm for real-time learning and adaptive robotic manipulation via auditory and tactile inputs.
- Created a Bayesian control framework enhancing grip stability by leveraging predicted object's inertial properties.
- Phase1. Implementation in Python, Phase2. Successfully transitioned with robust implementation in C++ on ROS.
- Published at AI-HRI. Work carried out concurrently with my Master Thesis. ArXiv Paper

PyTorch | Python | C++ | Robot Operating System (ROS) | Industrial Robots | Linux | LSTM

Machine Learning Intern | Logitech — Aug 2020 - Feb 2021

- Led a deep learning project in production for early tremor detection and diagnosis reaching a F1-score of 0.91 (LSTM-CNN).
- Leveraged keyboard and mouse usage data to anticipate various human diseases and focus on interpretability with SHAP.
- Collect/anonymize data via in-house app, store in AWS S3, ETL with Pyspark and predict from docker and display in UI.
- Collaborated with medical experts from hospitals (CHUV and HUG) for domain-specific insights.
- Prioritized MLOps, adopting iterative improvements through constant feedback monitoring, data analysis and A/B testing.
- Collaborate in the development and deployment of various other research project at Logitech (Computer vision, time series).

PyTorch | TensorFlow | Python | Docker | Weight & Biases | Kubernetes | AWS | Git | MLOps

Business Developer (Part-Time) | SMATCH SA — Jul 2017 - Jul 2019

- Contributed to Develop a sports connectivity platform during a two-year part-time in a dynamic Start-up. Website
- Conducted data analysis to gain insights from user interactions across the application, informing strategic decisions.
- Contributed to user base growth to +50,000 by making strategic business & technical decisions for the startup.
- Secured 50'000$ funding for the venture in the Olympic Capital, Lausanne.

Start-up | Python | Application Development | Front-End Development

Languages

French & English ●●●●●
German ●●●○○

Certifications

- AWS Certified Solutions Architect – Associate
- Databricks Certified Machine Learning – Associate
- Machine Learning Engineering for Production

Projects

Master Thesis : Robust Multimodal Contrastive Learning | github Paper — Feb-Aug 2021

- Author of a robust multimodal contrastive framework for attention-based models, focusing on Vision & Language tasks.
- Leveraged self-supervised pretraining, reinforcing latent relationships between modalities through adversarial samples.
- Managed large-scale multi-node, multi-GPU training in a collaborative project across ETHZ, EPFL, and NYC Universities.

Python | Pytorch | SLURM | DeepSpeed | Weight & Biases | Mixed Precision | Computer Vision | NLP

Emotion Analysis on OpensSubtitle (BERT) | github Paper — Feb-Jul 2020

- Developed a data-driven method for aligning movie subtitles with speakers, generating a unique dialogue analysis resource.
- Annotated with 32 emotions and 9 empathetic response intents using a BERT-based finetuned dialogue emotion classifier.

Python | Pytorch | NLP | Hugging Face | Kubernetes

Meta-Learner LSTM for Few-Shot Learning | github Paper — Feb-Jul 2020

- Enhanced performance evaluation and explored alternate architectures for LSTM-based meta-learner in few-shot regime.

Python | PyTorch | TensorFlow | Time-Series | Optimisation for Machine learning

Comparison Between Two Dimensionality Reduction Techniques | github Paper — Feb-Jul 2019

- Reviewed and compared LLE and its variant in terms of stability with diverse data and hyperparameters.
- Evaluated topology preservation and classification performance, benchmarking against t-SNE and UMAP.

Python | Scikit-Learn | Advanced Machine Learning

Learning to play Pong with Deep Reinforcement Learning | github — May-Jun 2019

- Developed an agent to play PyGame's Pong using policy gradient methods, Actor Critic Versus Advantage Actor-Critic (A2C).

Python | Deep Reinforcement Learning

Awards

Hackathon Databricks | 2nd Place — Sep 2023

- Build a RAG-based Q&A LLM Application. Developed in Python, scaled in Pyspark, and deployed on MLFlow.
- Process the data, generate embeddings (SBert), index vectors on ChromaDB, and retrieve and augment prompt for LLM.

LLM | ChromaDB | LangChain | Databricks | Python | Pyspark

Nominated project | 50 years event @ EPFL | github Paper — Feb-Jul 2019

- Engineered flexible, biocompatible thin-film sensor in cleanroom for vein temperature and blood flow measurements.
- Contribute to the C++ interface development for ESP32 Microcontroller to collect sensor data from PCB.

C++ | Sensors | Micro-Controller

High Frequency Trading (SHS) - Best poster 2015 EPFL — Sep-Dec 2015

- 1rst place among 1,700 EPFL students for the best poster analyzing high-frequency trading.

Photoshop

Education

Sep 2018 - Jul 2021 **MSc. Robotics** & **Data Science** | EPFL • ETHZ
Sep 2015 - Jul 2018 **BSc. Microengineering** | EPFL

References

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