Alessandro **Sanvito**

SOFTWARE AND AI ENGINEER

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Experience

Optiver *Amsterdam, Netherlands*

SOFTWARE ENGINEER *August 2023 - Current*

- Working in the Data Driven Algorithmic Position Taking team, developing and maintaining data pipelines and trading strategies.
- Building and optimizing data processing systems using Python, Spark, Polars, and DuckDB, with a focus on efficient data storage and retrieval from PostgreSQL and Delta tables.
- Collaborating closely with quantitative researchers and traders to implement and optimize systematic trading strategies, with direct impact on desk PnL.

Mercedes-Benz (AI-SEE Project) *Stuttgart, Germany*

AI RESEARCH INTERN AND MASTER THESIS STUDENT *May 2022 - June 2023*

- Conducted cutting-edge research on 3D human avatar modeling from monocular video data in diverse real-world environments.
- Designed and implemented generative neural models, including NeRFs and Diffusion Models, to improve computer vision performance in adverse weather conditions.
- Collaborated with a cross-functional R&D team to refine innovative ideas, resulting in a publication at ICCV (International Conference on Computer Vision).
- Leveraged skills in deep learning, 3D modeling, and generative AI to push the boundaries of digital character creation and visualization.

Education

KTH Royal Institute of Technology *Stockholm, Sweden*

MSc. IN ICT INNOVATION, DATA SCIENCE *Sept. 2020 - May 2023*

- Final grade: A - Excellent
- Implemented from scratch a diverse range of neural network architectures in NumPy, including MLPs, Hopfield Networks, and Deep Belief Networks.
- Reproduced data mining-related papers in Python and Java.

Polytechnic University of Milan *Milan, Italy*

MSc. IN COMPUTER SCIENCE AND ENGINEERING *Sept. 2020 - Jul. 2023*

- Final grade: 110/110 cum laude
- Developed a winning ML solution on the Twitter dataset for the international RecSys Challenge 2021 with the university team under the supervision of prof. Paolo Cremonesi with Dask, Catboost, and XGBoost.
- Built a recommender system for a book catalogue with NumPy, SciPy, and Pandas.

Polytechnic University of Milan *Milan, Italy*

BSc. IN ENGINEERING OF COMPUTING SYSTEMS *Sept. 2017 - Jul. 2020*

- Final grade: 109/110
- Implemented a cardboard game in Java, performing extensive testing with JUnit and Mockito.
- Created a performance oriented graph manipulation tool in C.

Publications

2023	**ScatterNeRF: Seeing Through Fog with Physically-Based Inverse Neural Renderings**, Ramazzina Andrea, Bijelic Mario, Walz Stefanie, Sanvito Alessandro, Scheuble Dominik, Heide Felix	*ICCV 2023*
2022	**United We Stand, Divided We Fall: Leveraging Ensembles of Recommenders to Compete with Budget Constrained Resources**, Maldini Pietro, Sanvito Alessandro, Surricchio Mattia	*ACM recsys'22*
2021	**Lightweight and Scalable Model for Tweet Engagements Predictions in a Resource-constrained Environment**, Carminati Luca, Lodigiani Giacomo, Maldini Pietro, Meta Samuele, Metaj Stiven, Pisa Arcangelo, Sanvito Alessandro, Surricchio Mattia, Maurera Fernando B. Peréz, Bernardis Cesare, Ferrari Dacrema Maurizio	*ACM recsys'21*

Skills

Programming	Python, SQL, Java, C++, C, LaTeX
Data Processing	Spark, Polars, DuckDB, PostgreSQL, Delta Lake, Pandas, NumPy
Machine Learning	Deep Learning (PyTorch, TensorFlow), Computer Vision, Generative AI (NeRFs, Diffusion Models), scikit-learn, MLlib, Catboost, XGBoost
Tools & Technologies	Git, Docker, Linux, CI/CD, pytest