SIMON MARIANI

Software/AI Engineer

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WORK EXPERIENCE

Software/AI Engineer

Univia

Jul 2023 - *present* (Full-time) Eindhoven, NL/Berlin, DE

- Led the development and deployment of large-scale front-end and back-end applications, leveraging Docker and Kubernetes for scalable deployments and implementing CI/CD pipelines.
- Deployed a multi-node Kubernetes cluster with an external database and a network file server to ensure data persistence, along with integrated monitoring and backup capabilities.
- Designed and built a platform that allowed users without cloud expertise to deploy and run AI modules, simplifying access to advanced technologies.
- Developed a real-time data visualization tool for municipalities, integrating sensor data for air and sound quality monitoring across multiple regions.
- Developed a Chatbot with built in file system and text vectorization for advanced information retrieval.
- Progressed to a lead engineer role, overseeing the entire development lifecycle, from architecture design to front-end implementation, and supervising a team of university interns across two projects.
- Managed client relationships, translating stakeholder needs into actionable technical tasks, ensuring successful product delivery and optimal outcomes.

Research Intern

ViNotion

Nov 2021 - Jul 2022 (Full-time) Eindhoven, NL

- Conducted research on Segmentation Networks and Out-of-Distribution Detection, and optimized deep learning models on large image datasets (e.g. CIFAR, Tiny ImageNet, LSUN etc) and improve upon existing OOD benchmarks, contributing to advanced computer vision techniques.
- The results of the study were implemented for image segmentation on proprietary datasets, enhancing their AI capabilities.
- The findings of the research were published at a recognized academic conference, furthering contributions to the field of computer vision.

Consultant

Blackbear

Jan 2022 - Dec 2022 (Part-time) Utrecht, NL

- Conducted market research focusing on product analysis, competitive analysis, feature evaluation, and pricing research, playing a pivotal role in shaping the foundation for new products through research-driven recommendations.
- Consulted with companies in the Services, Catering & Logistics, and Food Manufacturing sectors, engaging directly with stakeholders to gather business insights and align solutions with market needs.
- Delivered comprehensive market research reports, leading to significant improvements in clients' business development strategies and product offerings.

Programming Camp Coordinator

Vinea

June 2019 - Aug 2019 (Part-time) NL

- Delivered masterclasses on game design principles and web development, introducing young learners to fundamental concepts in software development.
- Managed a team of instructors, ensuring smooth operation of the camps and a positive learning environment.

ABOUT ME

A versatile Software Engineer with a strong background in building and deploying robust, scalable solutions. I have experience across the full development lifecycle, from designing and developing complex applications to leading their deployment on cloud platforms and setting up Kubernetes clusters. Skilled in both backend and frontend development, I thrive on solving challenging problems and delivering high-quality, production-ready solutions. My adaptability and quick learning enable me to excel in dynamic environments, while my continuous drive for growth pushes me to continue expanding my technical expertise and contribute to innovative projects.

PUBLICATIONS & RESEARCH

- **Master's Thesis AI (UvA):** ***The Effect of Covariate Shift and Network Training on Out-of-Distribution Detection.***
  Conducted a comprehensive literature review and developed a codebase for experiments, available on GitHub.
  Published in the Proceedings of the 18th International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications (VISIGRAPP 2023).
- **Reproducibility Study (UvA):** ***Generative Causal Explanations of Black-box Classifiers***
  Collaborated with a team of students to re-implement the code base from an existing research paper, validating its findings and extending the original work to assess the degree of reproducibility.
- **Bachelor's Thesis (UU):** ***Profiling Serial Killers Using Multiple Supervised Machine Learning Approaches***
  Applied and compared various machine learning techniques on a dataset from the Serial Homicide Expertise and Information Sharing Collaborative (SHEISC) to analyze and profile serial killers.

PROGRAMMING LANGUAGES

Python	●●●●●
JavaScript - TypeScript	●●●●●
HTML/CSS	●●●●●
C#	●●●●○
C++ - C	●●○○○
R - Clingo - Prolog - Netlogo	●●○○○

SOFTWARE DEVELOPMENT

Django	●●●●●
Flask - FastAPI	●●●●○
NodeJS + ExpressJS	●●●●●
SQL - NoSQL	●●●○○
ReactJS + VueJS	●●●●●
Figma	●●●●○
PyTorch - Scikit-learn	●●●●●

EDUCATION

Master of Science in Artificial Intelligence

University of Amsterdam

2020 - 2022 | Amsterdam, NL

- Completed a rigorous, technical program focusing on Deep Learning, Machine Learning, NLP, Reinforcement Learning, Computer Vision, and Active Learning.
- Earned the distinction cum laude for academic excellence and successfully published a master's thesis on Segmentation Networks and Out-of-Distribution Detection.
- Conducted a reproducibility study on the paper Generative Causal Explanations of Black-box Classifiers and developed a Recommender System for hotels as part of key projects.

Exchange Program

Tsinghua University

2019 - 2020 | Beijing, CN

- Attended Tsinghua University, one of the highest-ranking universities globally and the top-ranked university in China for an exchange program during his Bachelor program
- Completed courses in Distributed Machine Learning, Time Series Anomaly Detection, Human-Computer Interaction, and Project Management.
- Developed a neural network training project across three servers, enhancing his expertise in distributed systems, and designed an app focused on social interaction through human-computer interaction.
- The exchange program grew his passion for software engineering and strengthened his adaptability, collaboration, and project management skills by working closely with international peers on challenging projects.

Bachelor of Science in Artificial Intelligence

Utrecht University

2017 - 2020 | Utrecht, NL

- Completed one of the most interdisciplinary degrees, encompassing Math, Computer Science, Algorithmics, Neuroscience, Philosophy, and Linguistics.
- Enhanced practical skills through courses in Cognitive Science, AI Math, Linguistic Studies, Modal Logic, Game Design, Software Testing & Verification, and Intelligent Systems, gaining programming experience in C#, Python, Prolog, and NetLogo.
- Developed a 2D platformer game and adapted Pacman as part of game design projects, and created a text-based video game for Software Testing & Verification that required system verifications and unit testing.
- Conducted a bachelor thesis on Profiling Serial Killers Using Multiple Supervised Machine Learning Approaches.

DEPLOYMENT TOOLS

Docker - Docker Compose/Swarm
Kubernetes
Git - GitHub - GitHub Actions
Azure – AWS – Digital Ocean - OVH
ETL/ELT

AI & MACHINE LEARNING

- Deep Learning
- (Distributed) Machine Learning
- (Generative) Computer Vision
- (Generative) Natural Language Processing
- Reinforcement Learning
- Active Learning
- OOD-detection
- Anomaly Detection
- Time Series Analysis
- Recommender systems
- Game Theory

LANGUAGES

- English - Fluent
- Dutch - Fluent
- Spanish - Intermediate
- German - Intermediate
- Chinese - Elementary

SOFT SKILLS

- Client Communication, Project Management, Stakeholder Management
- Agile Scrum, Product Specification Design and Product Management
- Research, Design, Analysis and Testing
- Critical Thinking and Problem Solving
- Public Speaking