Bella Nicholson

Amsterdam, Netherlands | bellanich.github.io | bella-nicholson | bellanich | American

Resourceful Machine Learning Engineer with 3+ years of experience in a diverse set of organizations, ranging from tech startups and scaleups to an establish tech company. A life-long learner with a passion for optimizing ML models for real-world applications on resource-constrained devices. Excited about the intersection between engineering and AI research.

EXPERIENCE

Machine Learning Engineer // Brenntag // Nov 2023 – Present — Amsterdam, Netherlands

At the world's leading chemical distributor, I deployed and maintained ML products across 70+ countries. Thus far, I've:

- Migrated a virtual AI assistant (earning €30+ million in annual revenue) to a **more cost-effective and secure AWS** platform
- Developed a **real-time notification system** to monitor critical ML jobs and model metrics, improving system visibility
- Standardized quality controls across 15+ ML project components through the creation of a CLI package prototype

Artificial Intelligence Consultant // Deloitte // Sept 2021 – Oct 2023 — Amsterdam, Netherlands

As a contracted ML engineer, I optimized and implemented ML solutions for diverse clients, delivering:

- Increased system robustness of a **Dutch e-classified ads platform**'s "For You" page, systematically introduced **ML Engineering best practices**
- Launched a self-paced, ML-focused coding training website to standardize and improve code quality across Deloitte NL
- Centralized large-scale model storage, experiment tracking across various environments for a German steel conglomerate

Machine Learning Research Intern // Crunchr // Jan 2020 – Aug 2020 — Amsterdam, Netherlands

At a people analytics platform, I conducted graph-based representation learning research for the development of ML products:

- Built a proof of concept, one-off **representation learning** process to encode relational database entity information
- Demonstrated approach validity by applying deep neural networks to downstream classification tasks on process outputs

Computer Vision Intern // Cubelizer // June 2017 – July 2017 — Madrid, Spain

As part of a Google-backed edge computer vision startup, I improved customer detection 12% in retail space optimization:

- Developed a video stream-based **object detection** method in compliance with EU privacy regulations
- Applied image processing and classical machine learning techniques to low-resolution images

PROJECTS

Pocket Multi-Modal Large Language Model

- Deployed a **custom embedded, vision-text foundation model** across various iOS devices (laptop, phone, tablet)
- Extended an existing large language model hardware-optimization framework to quantize a new multi-modal model
- Documented results and process in a 4-part blog post series

Python Machine Learning Template

- Automated a comprehensive Python ML project setup process with a project template and 3 simple bash commands
- Enabled streamlined project creation with pre-built tests, an automated build process, and auto-generated documentation

EDUCATION

Master of Science, Artificial Intelligence

University of Amsterdam — Cum laude (8.0/10.0) — Sept 2018 – Dec 2020 — Amsterdam, Netherlands

- Courses on AI, including Deep Learning, Computer Vision, Natural Language Processing, Information Retrieval, and Reinforcement Learning
- Thesis on "Interpretable Representation Learning for Relational Data" in collaboration with Crunchr

Bachelor of Science, Biomedical Engineering

The College of New Jersey — Magna cum laude (3.8/4.0) — Sept 2014 – May 2018 — Ewing, New Jersey, USA

SKILLS

Programming languages & tooling

Python, Git (2016-present), Bash (2018-present), Terraform (2023-present), SQL (2019-present), Docker (2022-present)

MLOps platforms

Amazon Web Services (2021-present), Google Cloud Platform (2022-present), Databricks (2022-present)

ML frameworks

PyTorch (2018-present), PySpark (2022-present), FastAPI (2021-present), Tensorflow (2021-2022), Keras (2022)

English 100% | Spanish 75% | German 60% | Russian 50%