

# Bella Nicholson

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	MLOps platforms	ML frameworks
Python, Git (2016-present), Bash (2018-present), Terraform (2023-present), SQL (2019-present), Docker (2022-present)	Amazon Web Services (2021-present), Google Cloud Platform (2022-present), Databricks (2022-present)	PyTorch (2018-present), PySpark (2022-present), FastAPI (2021-present), Tensorflow (2021-2022), Keras (2022)