Miguel Â. Simões Valente

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EDUCATION

- **Utrecht University** — Utrecht, Netherlands
  Master of Science in Artificial Intelligence — *Sep. 2019 - Feb. 2022*
  - **Thesis**: Generative Based Zero-Shot Learning: Classifying Images from Text
- **Instituto Politécnico de Castelo Branco** — Castelo Branco, Portugal
  Bachelor of Computer Engineering — *Aug. 2016 – Jun. 2019*
  - **Thesis**: Compendium of three publications in applied object detection. [1], [2], [3]

EXPERIENCE

- **CyberACI** — Vienna, Austria
  Full Stack Machine Learning Engineer — Freelancer — *Oct 2023 - Present*
  - **LLM Cybersecurity Integration**: Integrated open-source Large Language Models into private cybersecurity networks to mitigate analyst fatigue. Developed both backend and frontend featuring server-side rendering utilizing HTMX and FastAPI. Leveraged llama.cpp with LMQL for serving open-source models, utilizing LLMs for natural language to SQL conversion. Proficient in prompt engineering, product development, and ideation. Collaborated continuously on ideation and product development with the CEO and team members. Using FastAPI, HTMX, Datatables, LMQL, llama.cpp, Postgres, Docker.

- **Prosus** — Amsterdam, Netherlands
  Machine Learning Engineer — *Oct 2023 - Present*
  - **LLM Analysis, Data Analytics & User Communications**: My responsibilities encompass data analytics, tracking customer communication interactions, and technical development. I analyze user interactions with our Slack-based chatbot, employing Large Language Models (LLMs) for comprehensive data analysis while maintaining confidentiality. I extract crucial metrics to gauge customer engagement and actively contribute to the development and enhancement of the chatbot's technical codebase. Using MongoDB, Databricks, AWS, OpenAI's API.

- **Redaka** — The Hague, Netherlands
  Software Enginner — Freelancer — *Feb 2023 - Aug 2023*
  - **Text Image Translation**: DLed the full-cycle development of a WebApp. Redaka enables users to register and pay for specialized text translation in images using a custom-built online image editor, with added custom solutions for text translation utilizing Gengoo, Google Translation, and OCR technologies, plus advanced computer vision inpainting techniques. Responsibilities included backend development with FastAPI, CI implementation via GitHub Actions, deployment on GCP, coordinating subcontracted frontend development, integrating Stripe for payments, and managing client interactions.

- **Oddity.ai** — Utrecht, Netherlands
  Deep Learning Developer — *May 2022 - Dec 2022*
  - **Violence Detection**: Designed and optimized deep learning models in PyTorch and TensorFlow, incorporating CNNs, RNNs, and advanced techniques for action recognition, and streamlined experimentation using Weights & Biases. Enhanced performance through ONNX and TensorRT, integrating with a Rust backend for accelerated inference.

- **TNO (Netherlands Organization for Applied Scientific Research)** — The Hague, Netherlands
  Deep Learning Research Intern — *Feb 2021 - Dec 2021*
  - **PyTorch Modelling & Applied Research** : Developed a zero-shot image classification system using text embeddings by encoding noisy text into class-specific embeddings and employing Normalizing Flows to generate images for underrepresented classes. Enhanced classifier training with both real and synthetic images for improved zero-shot performance. Utilized vector space techniques, pre-trained networks from the timm library, and advanced HuggingFace models for image and text encoding, sourcing data from ImageNet and Wikipedia.

- **Evox** — Castelo Branco, Portugal
  Deep Learning Developer — *Sep 2018 - Jun 2019*
  - **MVP for Waste Container Detection**: Created a dataset from the ground up, which was then used to fine-tune a YOLOv2 model. Deployed the model on a Jetson Nano. This effort culminated in three published works [1], [2], [3]. The publications included a review of a traditional computer vision approach leveraging ORB features and VLAD. Employed technologies like YOLOv2 darknet in C++ and OpenCV.