Ana Maria Farazica

DATA SCIENCE & ARTIFICIAL INTELLIGENCE · COMPUTER VISION & APPLIED AI

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PROFILE

Data Science & AI student at Breda University of Applied Sciences with hands-on experience in real-time computer vision, applied machine learning, and conversational AI. Currently conducting independent research on visual data acquisition and angle-variance in sign language recognition — a project that reflects both technical depth and a commitment to meaningful, human-centred technology. My project portfolio spans the full applied AI stack: from image classification pipelines and multi-modal systems to LLM-guided chatbots and data-driven storytelling. I thrive in challenge-based, collaborative environments where ideas are built, tested, and presented — and I bring a track record of leadership and cross-cultural engagement that began long before university.

EDUCATION

BSc Data Science & Artificial Intelligence

Sep 2024 – Jul 2027 (expected)

Breda University of Applied Sciences · Breda, Netherlands

- Relevant coursework: Machine Learning, Deep Learning, Computer Vision, NLP, Data Engineering, Statistics & Probability, Research Methods, Database Design & SQL

RESEARCH & PROJECTS

Candid — Virtual Compliance Assistant

Nov 2024 – Feb 2025

Collaborative Project (Duo) · Conversational AI · Corporate Game Chick Challenge (Parts 1 & 2)

- Co-designed an LLM-guided compliance training assistant with a hybrid scripted/decision-tree architecture and 10 structured ethical dilemma scenarios across two connected project phases
- Defined Candid's full behavioural framework: open-ended questioning logic, devil's advocate prompting, out-of-scope redirection, multilingual handling, and escalation to compliance officers
- Evaluated through structured scenario testing and produced a formal improvement report covering personalisation features, real-time compliance database integration, and platform scalability

Look-Out-Traffic — Autonomous Traffic Sign Recognition

Feb 2025 – Apr 2025

Academic Project · Computer Vision · Transfer Learning · Autonomous Systems

- Designed and built a traffic sign recognition system for autonomous vehicle applications, classifying five priority road sign classes with direct relevance to real-time TSR pipelines used by systems like Tesla, Mobileye, and Volvo
- Manually curated a 702-image dataset from Mapillary and Google Street View, handling the full preprocessing pipeline including cropping, standardisation, and class balancing from scratch
- Developed four model iterations (MLP, Basic CNN, MobileNet, EfficientNetB0) to systematically evaluate architecture impact; final EfficientNetB0 transfer learning model achieved 100% test accuracy, surpassing a human-level benchmark of 92.5% established through a structured participant survey
- Conducted error analysis across iterations, identifying class imbalance and spatial feature loss as key failure modes — demonstrating that understanding why a model fails is as important as optimising when it succeeds

TwAIn — Emotionally Intelligent Self-Awareness Chatbot

Apr 2025

Collaborative Project (Duo) · NLP · Computer Vision · Conversational AI

- Co-designed a multi-modal AI system combining YOLOv8 real-time clothing detection, MediaPipe facial emotion analysis, and an LLM-guided cognitive layer generating personalised prompts from live visual input
- Designed the chatbot's knowledge base and conversational scaffolding across four core modules (self-awareness, motivation, objectivity, action), ensuring psychologically safe and emotionally resonant dialogue
- Explored deployment across desktop (Electron), web (Flask + React + Three.js), and Unity-based avatar formats — full-stack system design from prototype to presentation

BookVision — OCR-Based Book Identification System

Ongoing

Personal Project · Computer Vision · OCR

- Independently developing an image-based book identification tool using OCR and Open Library API matching — conceived and built entirely outside academic requirements
- Implemented publisher noise filtering and fuzzy matching logic to improve identification robustness; currently refining the pipeline ahead of deployment

Camera Viewing Angle Variance for Sign Language Recognition

Feb 2026 – Apr 2026

Independent Research · Breda University of Applied Sciences · Supervisor: Myrthe Buckens

- Designed a three-phase transfer learning pipeline to evaluate how camera viewing angle affects real-time visual data interpretation in Dutch Sign Language (NGT) recognition
- Handled the full visual data acquisition pipeline personally — collecting ~2,750 images across controlled angle conditions (0°, −30°, +30°)
- Identified and resolved a critical domain gap mid-research by retraining with MediaPipe landmark preprocessing, restoring validity without restarting the project
- Achieved 89.8% frontal accuracy; applied McNemar's test with Bonferroni correction across angled conditions; completed full EDA, ethics application, and Data Management Plan

TECHNICAL SKILLS

Languages	Python, SQL (intermediate — joins, subqueries, aggregations, query optimisation)
ML & AI	Scikit-learn, TensorFlow, Keras, PyTorch, Transfer Learning, CNNs, RNNs, Deep Learning, MediaPipe, YOLOv8
Computer Vision	OpenCV, image classification, object detection, OCR (Tesseract / Google Cloud Vision), visual data acquisition & preprocessing
NLP & Conv. AI	Text processing, fuzzy matching, LLM-guided system design, conversational architecture & dialogue flow
Data Engineering	Pandas, NumPy, data collection, cleaning & preprocessing, EDA, feature engineering, pipeline design, time series analysis
Statistics	Hypothesis testing, confidence intervals, McNemar's test, Bonferroni correction, probability distributions
Tools & Platforms	Git & GitHub, Jupyter Notebook, WSL2 Ubuntu, Google Colab
Visualisation	Matplotlib, Seaborn

LEADERSHIP & EXTRACURRICULAR

Vice President, Student Council

2022 – 2023

Colegiul Național Pedagogic „Spiru Haret" · Focșani, Romania

- Elected Vice President; assumed full presidential responsibilities in the president's absence and represented the school at official external gatherings
- Organised school-wide events including a charity market raising 1,000 RON for Arca lui Noe animal shelter — coordinating logistics, student participation, and community outreach end to end
- Acted as a bridge between students and administration, advocating for student interests in a formal leadership capacity

Student Representative, Administrative Council

2023 – 2024

Colegiul Național Pedagogic „Spiru Haret" · Focșani, Romania

- Served as the official student voice in administrative council meetings, participating in institutional decision-making at school governance level
- Ensured student perspectives were consistently heard and fairly represented in discussions affecting school policy and community life

SOFT SKILLS

Leadership — Two consecutive years of elected student governance; recognised at university for motivating teams and stepping up when needed

Collaboration — Experienced in both leading and contributing within teams; comfortable in multicultural, interdisciplinary environments

Self-direction — Maintain a personal long-term project (BookVision) and a portfolio website entirely on my own initiative, outside academic requirements

Resilience — Navigated a critical mid-research setback and resolved it independently without compromising scope or deadlines

Communication & Presentation — Able to represent others formally, present technical findings to diverse audiences, and translate complex work into clear, accessible narratives

Critical Thinking — Approach problems from multiple angles; demonstrated through independent research design, mid-project pivots, and structured evaluation work

LANGUAGES

Romanian — Native

English — Fluent (academic & professional)

ADDITIONAL

Active GitHub with documented project repositories · github.com/anamariafarazica

Personal portfolio · anamariafarazica.com

Interested in accessible technology, open data, and human-centred AI applications

References available upon request