Imed Benmadi

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EDUCATION

Eötvös Loránd University (ELTE) — Budapest, Hungary
MSc in Data Science — *Sep. 2024 – Present*
- Member of the Data Science Lab; focus on applied machine learning and computer vision.

Kasdi Merbah University — Ouargla, Algeria
BSc in Computer Science — *Sep. 2021 – Jun. 2024*

RESEARCH EXPERIENCE

Data Science Lab, ELTE — Budapest, Hungary
Research Student – Bio-Inspired Computer Vision — *2024 – Present*
- Worked on bio-inspired edge detection models motivated by human visual perception.
- Studied and implemented XYW-Net–style architectures with multi-path feature extraction.
- Conducted experiments, ablation studies, and quantitative evaluation on benchmark datasets.
- Implemented models and experiments in PyTorch with reproducible training pipelines.

SELECTED RESEARCH & TECHNICAL PROJECTS

XYW-Net Bio-Inspired Edge Detection – Ablation Study [Code] — *PyTorch*
- Studied the XYW-Net bio-inspired edge detection framework by reading and analyzing the original research paper.
- Reproduced core components of the model and conducted ablation studies to understand the contribution of individual pathways.
- Analyzed the impact of bio-inspired design choices on edge detection performance.
- Evaluated results using standard edge detection metrics and qualitative visual comparison.

FLEAD: Federated Learning for IoT Anomaly Detection — *Kafka, Flink, Spark*
- Built a federated learning setup for anomaly detection across distributed IoT devices.
- Implemented real-time streaming pipelines and batch evaluation workflows.
- Analyzed model behavior under heterogeneous and non-IID data settings.

Object Detection – Where's Waldo? — *PyTorch*
- Developed and trained deep learning models for object detection.
- Focused on dataset preparation, evaluation metrics, and error analysis.

TECHNICAL EXPERIENCE

Data Annotator — Onsite
Tech Mahindra (Gemini in Assistant / Percent of Query understanding Projects - Google) — *Aug. 2025 – Present*
- Annotated AI assistant responses for Google "Gemini in Assistant" and "Percent of Query Understanding" projects.
- Applied quality guidelines to ensure high-standard evaluation of Assistant responses used to improve models.
- Collaborated with cross-functional teams to provide feedback on AI behavior and performance.

Technical Intern – IT & Development — Hassi Messaoud, Algeria
ENAGEO (National Enterprise of Geophysics) — *Jun. 2022 – Aug. 2022*
- Built a software to process daily reports and visualize ENAGEO trucks' movement and productivity , it helped tracking the machines and do a data driven decisions to improve productivity
- Gained hands-on insight by closely observing internal development workflows, application structures, and the technologies utilized across various platforms
- Worked with IT infrastructure on network architecture and system administration

Additional Part-Time Experience

Tourism Support / Sales Associate Budapest, Hungary
City Sightseeing – Hop-On Hop-Off *Nov. 2024 – Aug. 2025*

- − Part-time role alongside studies in an international, customer-facing environment.

Research & Technical Skills

- **Machine Learning**: deep learning, anomaly detection, model evaluation, ablation studies
- **Computer Vision**: edge detection, CNNs, bio-inspired architectures
- **Data Analytics**: preprocessing, feature engineering, time-series analysis, visualization
- **Tools**: Python, PyTorch, Kafka, Flink, Spark, Docker, Git
- **Databases**: MySQL, MongoDB

Certifications

- **IBM Data Science Specialization** – Coursera `View Credential`
- **Google Data Analytics Specialization** – Coursera `View Credential`
- **Google Business Intelligence Specialization** – Coursera `View Credential`
- **Complete Data Science Bootcamp** – 365 Careers `View Credential`

Languages

Arabic (Native)   French (Fluent)   English (Fluent)   Hungarian (Basic)