

Yasser El Jarida

PhD Student (Predoctoral Year), AI in Healthcare
UM6P College of Computing, Ben Guerir
Morocco

+212-667314575
✉ yasser.eljarida@um6p.ma
🐙 GitHub Profile
🌐 LinkedIn Profile
🌐 yasser.sh

EDUCATION

- **PhD in Computer Science Medical AI** 2024 - Present
UM6P College of Computing, Ben Guerir Currently enrolled
- **Computer Engineering: Big Data and Cloud Computing** 2021 - 2024
ENSET, Mohammedia
- **Preparatory Classes Mathematics and Physics (CPGE)** 2019 - 2021
Ibn Abdoun High School, Khouribga
- **Baccalaureate in Mathematical Sciences A** 2018 - 2019
Abou El Kacem Ezzayani High School, Khenifra

EXPERIENCE

- **Researcher** October 2024 - Present
UM6P College of Computing, Ben Guerir, Morocco On-site
Transformers, Cross-Attention, PyTorch, ECG Analysis, Surgical Phase Detection, Synthetic Data
 - Conducting advanced research on AI applications in healthcare, focusing on cardiology (ECG analysis) and surgical workflow optimization through intelligent video analysis.
 - Designed and implemented a Boundary-Aware FACT (Frame-Action Cross-Attention Temporal) model for surgical phase segmentation, achieving 2nd place at the MICCAI 2025 OMNIA SICS155 Challenge.
 - Introduced a lightweight boundary supervision mechanism and a boundary-weighted temporal smoothing loss, improving segmentation accuracy by +1.3% and F1-score by +1.5 while keeping inference unchanged.
 - Explored Transformer-based architectures (FACT, SurgFormer, TimeSformer, VideoMAE-v2) for temporal understanding and phase recognition in surgical videos.
 - Collaborated closely with clinical experts to ensure that AI solutions are interpretable, efficient, and aligned with surgical workflow needs.
 - Previously developed synthetic datasets and CNN-based regression models (ResNet50, EfficientNet-B0, InceptionV3) for instant particle size distribution estimation, published at the CVPR 2025 SynData4CV Workshop (A* conference).
- **Data Science Internship** February - August 2024
Green Energy Park (UM6P/IRESEN), Ben Guerir, Morocco On-site
Python, YOLOv8, SAM, CVAT, DeepFill v2, ResNet50, Streamlit
 - Developed a comprehensive computer vision pipeline integrating YOLOv8 and SAM for the detection, segmentation, and reflectivity assessment of CSP mirrors.
 - Improved data quality using advanced image inpainting techniques (DeepFill v2), achieving a reflectivity prediction accuracy (R^2) of 94% with ResNet50.
 - Deployed an intuitive web-based dashboard using Streamlit for interactive model evaluation and result visualization.
- **Data Science Internship** June - July 2023
Devoteam, Rabat, Morocco On-site
Python, TensorFlow, CNNs, YOLOv8
 - Implemented computer vision-based violence detection models using YOLOv8, optimizing accuracy through extensive hyperparameter tuning and performance validation.
 - Analyzed results extensively, providing detailed insights into precision, recall, and F1-score for strategic model improvements.

PUBLICATIONS

- **Instant Particle Size Distribution Measurement Using CNNs Trained on Synthetic Data** 2025
CVPR 2025 Workshop: SynData4CV (Accepted, A Conference)*

RESEARCH & PROJECTS

- Instant Particle Size Distribution Prediction with CNNs (Published)** *CVPR Workshop 2025 (SynData4CV)*
Blender, CNN, ResNet50, EfficientNet, Synthetic Data
 - Created a realistic, high-quality synthetic dataset using Blender to train CNN models (ResNet50, EfficientNet-B0, InceptionV3) for predicting particle size distributions (PSD).
 - Evaluated the effectiveness of synthetic data for accurately solving PSD prediction tasks, demonstrating the potential of using generated data to replace or supplement real-world samples.
- Boundary-Aware FACT for Surgical Phase Recognition** *MICCAI 2025 OMNIA SICS challenge*
Transformers, Cross-Attention, PyTorch, I3D, FACT, Temporal Modeling
 - Designed a boundary-aware extension of the FACT (Frame–Action Cross-Attention Temporal) model for surgical phase segmentation, introducing auxiliary boundary supervision to improve temporal consistency and boundary precision.
 - Achieved 2nd place (82% test accuracy) on the official SICS-155 leaderboard, outperforming standard Transformer and MS-TCN baselines.
 - Implemented an efficient boundary head and a boundary-weighted total-variation loss that reduced over-segmentation and sharpened phase transitions without inference overhead.
 - Conducted extensive hyperparameter sweeps and ablation studies demonstrating consistent accuracy and F1-score improvements (+1.3% accuracy, +1.5 F1).
- Foundation Model for ECG Analysis (Current)** *UM6P College of Computing, Ongoing*
Vision Transformers, CNN, PyTorch, Signal Processing
 - Developing robust and generalizable foundation models based on Vision Transformer architectures for detailed ECG data interpretation and precise cardiac diagnostics.
 - Addressing key challenges in ECG analysis, including handling noisy signals, detection of irregular cardiac rhythms, and enhancing model interpretability to improve clinical reliability.

CERTIFICATIONS

- Human Research: Data or Specimens Only Research (Basic Course)** *CITI Program / MIT Affiliates*
- Fundamentals of Accelerated Computing with CUDA Python** *NVIDIA*
- Neural Networks and Deep Learning** *DeepLearning.ai*
- Supervised Machine Learning: Regression and Classification** *DeepLearning.ai*

TECHNICAL SKILLS & INTERESTS

Programming Languages: Python, C, C++, Java
Libraries/Frameworks: PyTorch, TensorFlow, OpenCV, Pandas, NumPy, Scikit-learn
Tools/Platforms: Git, GitHub, Docker
Cloud/Database Technologies: MongoDB, MySQL, Google Cloud Platform
Research Interests: Machine Learning, Deep Learning, Computer Vision, Healthcare AI
Soft Skills: Problem Solving, Self-learning, Adaptability, Effective Communication
Languages: English (Advanced), French (Advanced), Arabic (Native)

ACHIEVEMENTS

- 2nd Place at MICCAI 2025 OMNIA SICS155 Surgical Phase Recognition Challenge** *2025*
- Accepted Paper at CVPR 2025 Workshop (SynData4CV)** *2025*
- 1st Place, Hackathon: Blockchain and AI at the Service of Health** *2023*