Abderrazak Chahid, PhD

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Professional Experience

APRIL 2024 – PRESENT
Data Scientist | Freelancer, Canada

- Worked on eCommerce and smart aquaculture projects, leveraging machine learning to optimize system efficiency.
- Developed, fine-tuned and tested LLMs including BERT and LangChain to optimize text classification.
- Built an ETL pipeline with feature extraction, time-series analysis, and statistical modeling using PyMC to derive insights.
- Designed and deployed end-to-end machine learning models for regression and object detection to enhance decision-making.
- Deployed ML models on edge devices using NVIDIA Jetson boards and integrated cloud services (AWS, Azure) with Terraform for infrastructure automation.
- **Skills Used**: Python, PyTorch, TensorFlow, Keras, Docker, Kubernetes, AWS (SageMaker, EC2, S3), Azure, Terraform, SQL, NoSQL, PyMC, NVIDIA Jetson, Matplotlib, Seaborn, Scikit-learn, Pandas, NumPy, Git, CI/CD pipelines.

APRIL 2021 – SEPTEMBER 2023
Research Scientist — Postdoctoral fellow | Ontario Tech University, Canada

- Designed a centralized MySQL database for managing 3D CT data and annotations.
- Accelerated 3D X-ray CT scan inspection, reducing full diagnostic time per object to 10 minutes.
- Automated road inspection by integrating DJI Mavic3 drone technology with 3D cameras, and GPS sensors.
- Reduced road inspection time to 30 minutes per mile, significantly faster than traditional methods.
- **Skills Used**: Computer Vision, 3D Data Processing, MySQL, Python, OpenCV, Image Processing, Drone Technology, GPS Integration.

MARCH 2020 – DECEMBER 2020
Machine Learning Engineer | Aquash Technology Startup, KSA

- Implemented reinforcement learning (RL) and model predictive control (MPC) to optimize fish feeding, achieving an FCR of 1.34 and a weight estimation error of 6.6%. [Full article: PDF]
- Developed a waterproof hardware system with underwater cameras to monitor fish growth and activity.
- Enabled real-time remote visualization and monitoring of the feeding process and fish growth.
- **Skills Used**: Reinforcement Learning (RL), IoT, Edge Computing, TensorFlow, OpenCV, Hardware Integration, Data Analysis.

JANUARY 2015 – DECEMBER 2020
Graduate Researcher| KAUST, KSA

- **Biomedical Signal Processing**: Developed SCSA-based algorithms for de-noising and preprocessing Magnetic Resonance Spectroscopy (MRS) signals and Magnetic Resonance (MR) images, enhancing diagnostic quality.
- **Feature Engineering:** Designed innovative feature extraction methods, including SCSA and Quantization-based Position Weight Matrix (QuPWM), for epilepsy detection (MEG), DNA sequence classification, and gesture recognition. [Full articles: PDF, PDF]
- **Machine Learning Integration**: Applied extracted features to machine learning models for predictive biomedical diagnostics.
- **Skills Used**: Signal Processing, Feature Engineering, Machine Learning, Deep Learning, Neural Networks, Biomedical Data Analysis.

Education

Nov 2020
PhD of Electrical and Computer Engineering | King Abdullah University of Science and Technology (KAUST) | KSA
Thesis: Pre-processing and Feature Extraction Methods for Smart Biomedical Signal Monitoring (PDF)

AUG 2014
Master of Science in Embedded Systems and Micro-systems | Universite de Lorraine | Nancy, France
Thesis: Novel single-phase active power filter for arc fault detection

JUL 2013
Bachelor of Science in Electrical Engineering | Institut National des Sciences Appliquées de Toulouse| France
Ecole Nationale des Sciences Appliquées | Morocco

Languages: English: Fluent / **French**: Fluent