Maher Sadok Messaoudi

Software & AI engineer
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Education

Master of Science (M.Sc.) – Cyber Security and Intelligent Industry **2021 – 2022**
Faculty of sciences of Sfax *Sfax, Tunisia*

Bachelor of Science in Industrial Computer Science **2016 – 2021**
The National School of Electronics and Telecommunication of Sfax *Sfax, Tunisia*

Experiences

AudioZ **May 2023 – January 2025**
AI engineer *Montreal, Canada*

- Engineered a **Visual Dubbing pipeline** using **computer vision** and **generative AI** to synchronize spoken dialogue with characters' lip movements, enhancing multimedia content engagement.
- Integrated **AWS-S3** for secure and scalable storage of large-scale audio-visual datasets.
- Developed a **Generative Neural Network** model (**GAN, Diffusion**) data to produce high-quality, lip-synchronized dubs using audio-video data.
- Developed and optimized backend microservices using **Python, FastAPI** and **AWS Lambda** for scalable data processing.

W.A. IT Advisory **January 2023 – May 2023**
Software Engineer *Tunis, Tunisia*

- Designed and optimized **RESTful APIs** using **Spring Boot**, enhancing system scalability and reducing response times.
- Secured microservices by integrating **Keycloak** for authentication and authorization (**OAuth 2.0**).
- Exposed a cyber threat detection model as a **REST API** using **Spring Boot** and **FastAPI** enabling real-time security monitoring.
- Automated deployments with **Docker** and **Jenkins**, accelerating release cycles.
- Enhanced system reliability by implementing unit tests using the **JUnit** framework and integration tests **(Spring Test, Postman)**, achieving high test coverage.

Texas A&M University **February 2022 – December 2022**
AI Engineer *Doha, Qatar*

- Scripted an automated code to collect data from +1000 PDF files using **Python** libraries and inserting them into a **SQL database** to help data scientists estimate motors breakdowns in a research project with Shell lab in Qatar.
- Developed a **DNN** classifier for mechanical rotating faults using **TensorFlow**, analyzing time series data to predict equipment failures with 97% accuracy.
- Interpreted **10GB+ time series** data to identify trends, patterns, and other helpful information in an electrical partial discharge research project.
- Designed and implemented a data visualization dashboard using Python libraries **(Matplotlib, Seaborn, Plotly)** to present trends and anomalies from time series data to researchers and stakeholders.

Primatec Engineering **July 2021 – December 2021**
Software Engineer *Sfax, Tunisia*

- Led the **Jenkins CI pipeline** for the BMW autonomous driving project, achieving a 30% increase in deployment efficiency and significantly reducing integration errors.
- Developed **automation scripts (Python, PowerShell)** to streamline data processing & code updates, boosting workflow by 20%.
- Managed **Git** for version control, enhancing team collaboration and code management efficiency.
- Collaborated in a team environment, employing **SCRUM methodology** for sprint planning and agile project execution, ensuring streamlined and effective delivery.

Primatec Engineering **February 2021 – June 2021**
Machine Learning Engineer Intern *Sfax, Tunisia*

- Processed, cleaned, formatted, and analyzed data using **NumPy**, **Pandas**, and **Tableau**.
- Trained and fine-tuned **BERT-base model** for **NLP** classification using **PyTorch** to classify test requirements and predict the number of possible scenarios and achieved a 30% improvement in the approval decision time.
- Designed an internal web application using **Angular 11**, **Flask**, **RestAPI**, and **MySQL** that deploys the Machine Learning solution and supports the actions of the software testing team.

Tpluss **January 2021 – May 2021**
Software engineer – Remote part-time *Paris, France*

- Participated in designing and implementing **RESTful APIs** for a medical web application using **Spring Boot,** enabling seamless integration with **Angular 11** frontend components.
- Built an **OCR-based information extraction service** for automated prescription analysis, improving accuracy and client satisfaction.
- Designed and deployed a robust **CI/CD pipeline** using using **Docker** and **Gitlab CI**, reducing deployment time.
- Strengthened pipeline security by integrating **Gitleaks** for sensitive data scanning and **Trivy** to detect vulnerabilities in Docker images, ensuring compliance with security standards.

Skills

Programming Languages: Python, Java, JavaScript, TypeScript
Frameworks: Flask, Angular CLI ,Spring Boot
Data Science: TensorFlow, PyTorch, Keras, Deep Learning, Generative AI, NLP, OCR
DevOps Tools: Git, Gitlab CI, Jenkins, Docker, Kubernetes, Swagger, Grafana, ELK stack
Database: SQL, Hadoop
Security Tools: IDS (Snort), Nmap, Trivy, Gitleaks
Project Management: Scrum, Kanban, Agile, Jira
Soft Skills: Multitasking, Problem solving, Communication, Teamwork

Achievements

- Certified Kubernetes Application Developer (CKAD) - Ongoing
- Certified Microsoft Azure Fundamentals (AZ-900) - 2022
- Published a Conference paper in IECON 2022 as a first author. **DOI:10.1109/IECON49645.2022.9968875**
- Led 10+ AI Workshops for Teenagers on AI fundamentals.
- Winner – Post Covid Online Ideas Competition 2020 (4C Enetcom & Leipzig University).
- Ranked 4/266 in the competition UmojaHack Africa 2021: Sendy-Delivery Rider Response Challenge.

Languages

German: Basic **English:** Advanced **French:** Advanced **Arabic:** Native