

# Abir Chebbi

## Software Engineer | AI & Machine Learning

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## PROFESSIONAL SUMMARY

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Recent Software Engineering graduate with strong expertise in software development, artificial intelligence, and data-driven solutions. Experienced in building end-to-end applications across AI, web, and embedded systems. Skilled at designing scalable architectures, integrating advanced machine learning models, and delivering innovative solutions in multidisciplinary environments. Motivated to contribute technical expertise to challenging projects and grow within a forward-thinking team.

## EXPERIENCE

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### Upwork | Voice-based Transcription and Speaker Identification Web App | Jun 2025 - Present | Freelance

- Collaborated with a freelancer to develop a web application for meeting transcription and speaker identification.
- Integrated Pyannote AI for diarization and speaker recognition, and Whisper for high-accuracy speech-to-text transcription.
- Contributed to backend services with FastAPI, frontend with React, and database integration with PostgreSQL.
- Delivered an end-to-end solution enabling automated transcription and participant identification for meetings.

**Keywords:** Python, FastAPI, REST API, React, NLP, Pyannote AI, Whisper, Git, Speech Recognition.

### AVIONAV | Sailor Vision AI: Embedded Vision Module for Maritime Surveillance on NVIDIA Orin - Graduation Project | Feb 2025 – Sep 2025 | Hybrid

- Developed and integrated Sailor Vision AI, a comprehensive maritime surveillance desktop application for the SailorTech drone, featuring:
  - An intelligent and autonomous vision module, leveraging advanced AI and embedded processing for real-time detection of floating objects.
  - Developed an operator interface for real-time situational awareness and robust operational control.
  - Integrated the vision module seamlessly with the drone's ROS architecture for robust communication and data exchange.
  - Tested the entire system rigorously within a simulated environment to ensure optimal performance and reliability.
  - Applied Scrum methodology for iterative project development and utilized UML for system modeling.
  - Analyzed existing maritime surveillance solutions, positioning Sailor Vision AI as an innovative, low-latency, and cost-effective alternative.

**Keywords:** Python, AI, YOLOv8, NVIDIA Orin, ROS (Robot Operating System), PyQt, Scrum, UML, Computer Vision, Maritime Surveillance, Drone, Embedded Processing, Real-time Systems, UI/UX Design.

**Upwork | AI Model Training for Text Extraction & Compliance Analysis | Mar 2025 - Apr 2025 | Freelance**

- Collaborated with a freelancer to design and implement compliance analysis pipelines.
- Contributed to OCR-based text extraction for PDF/DOCX documents and validation workflows.
- Assisted in integrating a BERT-based compliance model trained on ISO 27001 and PCI DSS datasets.
- Supported deployment of the solution as a Flask microservice with RESTful endpoints.

**Keywords:** Python (Programming Language), Flask, REST API, OCR, NLP, BERT, Git, UX/UI, Compliance Analysis.

**Maison du Web | Design and Development of an e-commerce platform - Internship | Sep 2024 - Oct 2024 | Hybrid**

- Developed an e-commerce platform using Laravel, Filament and Livewire.
- Designed and implemented the admin panel to streamline administrative tasks.
- Developed a customer portal for enhanced user experience and interaction.
- Conducted thorough testing and debugging to ensure system reliability and performance.

**Keywords:** PHP, Laravel, Filament, Livewire, Tailwind, MySQL, Git, UX/UI.

**Smartica Solutions | Design and Development of an AI-Powered Conversational Agent - Graduation Project | Feb 2022 - Jun 2022 | Fulltime**

- Developed an AI chatbot for e-commerce using NLP.
- Applied NLP to process and extract key entities from datasets.
- Developed AI models to enable natural language query interpretation and integrate insights into chatbot responses.
- Built backend systems to support real-time data interpretation and dialogue management.
- Integrated chatbot with communication channels for enhanced user interaction and decision support.

**Keywords:** Python, Machine Learning, Data Analysis, Deep Learning, Natural Language Processing (NLP), NLTK, SpaCy.

**CDF Center | Design and Development of a Support Ticketing System - Internship | Jul 2021 - Sep 2021 | Remote**

- Developed a Support Ticketing System using ASP.NET MVC and C#.
- Designed and implemented the system's architecture.
- Integrated Relationship Management (CRM) features to enhance customer support interactions.
- Conducted thorough testing and debugging to ensure system reliability.

**Keywords:** ASP.NET MVC, C#, UML, .NET Framework, Relationship Management (CRM), Scrum

**Municipality IT Department | Internship | Jan 2020 - Feb 2020 | Fulltime**

- Assisted in the installation, configuration, and troubleshooting of hardware and software systems.
- Conducted research and provided recommendations on new technology solutions.

**Keywords:** IT Support, Software Configuration, System Maintenance, Technical Assistance, Solution Recommendation.

## ACADEMIC PROJECTS

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- **Skin Cancer Detection with Deep Learning** – Technologies: PyTorch, EfficientNet, MobileNet, Computer Vision
- **Conversational Chatbot based on Seq2Seq Model and Reinforcement Learning** – Technologies: Python, TensorFlow, Machine Learning (LSTM, Seq2Seq model with Attention, Reinforcement Learning)
- **School Guidance System** – Technologies: Python, Scikit-Learn, Pandas Deep Learning, FastAPI
- **Image and Video Conversion and Compression API** – Technologies: Flask, FFMpeg, PIL, Requests, WebP

## EDUCATION

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### Software Engineering Degree

Higher Institute of Information and Communication Sciences and Technologies  
Sep 2022 – Sep 2025

### Information Systems Development Degree

Higher Institute of Technological Studies September  
Sep 2019 – Jun 2022

### Baccalaureate Degree in Experimental Sciences

Bir El Haffey High School  
Jun 2018 – Jun 2019

## SKILLS

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- **Programming Languages:** Python, Java, C, C#, JavaScript, Dart, PHP, HTML, CSS
- **Frameworks:** TensorFlow, PyTorch, Keras, Pandas, NumPy, Scikit-learn, NLTK, Spacy, Flask, FastAPI, React, Bootstrap, Spring Boot, ASP.NET MVC, Laravel, Flutter, Tailwind, PyQt, Filament, Livewire.
- **CI/CD:** Git, GitHub, Docker, GitHub Actions, Jira, Microsoft Teams.
- **Databases:** PostgreSQL, MySQL, FireBase, NoSQL, MongoDB
- **Operating Systems:** Windows, Ubuntu

## CERTIFICATIONS

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- AWS Academy Graduate - AWS Academy Cloud Foundations
- AWS Academy Graduate - AWS Academy Machine Learning Foundations
- Microsoft Technology Associate : Introduction à la programmation avec HTML et CSS - Certiport  
- A Pearson VUE Business

## LANGUAGES

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- Arabic: Native
- French: Advanced
- English: Advanced