

# Majdoub Sarra

*Fourth-year Software Engineering student at INSAT*

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📍 Bizerte, Tunisia

## Profile

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**Fourth-year Software Engineering student at INSAT** with interests in full-stack development and applied Machine Learning. Experience with backend APIs, databases, and web technologies, and currently developing practical AI skills through projects and online training. Motivated to contribute to AI-powered web applications in a Linux-based environment

## Technical Skills

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### Programming Languages

- Python, JavaScript
- Java, C, C++, PHP (academic experience)

### Database Management

- **Relational Databases:** MySQL, PostgreSQL
- SQL (queries, joins, CRUD)
- PL/SQL (academic)
- Relational database design

### Systems, DevOps & Version Control

- **Unix / Linux environment**
- Git & GitHub (collaboration, version control)
- Basic server-side understanding (deployment, configuration)

### AI, Machine Learning & Data

- **Python for Data & ML:** Pandas, NumPy, Matplotlib, Scikit-learn
- **Machine Learning:**
  - Supervised: Linear & Logistic Regression, KNN, Decision Trees
  - Unsupervised: K-Means, Hierarchical Clustering
- **Model Evaluation:** Accuracy, Precision, Recall, F1-score
- Data Cleaning, Preprocessing & Exploratory Data Analysis (EDA)
- Jupyter Notebook

### Web Development (Full-Stack)

- **Frontend:** HTML5, CSS3, JavaScript, **React.js**, **Next.js**
- **Backend:** **Node.js**, **NestJS**, FastAPI, Express.js (basic)
- **APIs:** RESTful API design, CRUD operations
- **Frameworks:** NestJS, Symfony (academic)

### Object-Oriented Programming (OOP)

### Mobile Development

- Flutter
- Firebase (Authentication, Firestore, Realtime Database, Storage)

### Methodologies & Quality

- Agile & Scrum (university projects, sprints, user stories)
- Unit testing (basic)
- Documentation & deliverable quality

## Education

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2018/09 – 2022/06

### 2018/09 – 2022/06 Baccalaureate Degree

*Pioneer High School, Bizerte – October 15, 1963*

Earned my Baccalaureate degree in Mathematics with an average of 17.59 (Tunisian System) equivalent GPA: 3.8–4.0 (approx.)

2022 – 2027

### Software Engineering

*Insat*

Insat

Relevant Coursework:

- Web Development Fundamentals
- Database Management Systems
- Algorithms and Data Structures
- Operating Systems
- System Design

## Projects

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2025/11 – 2025/11	<b>SmartRestaurantService — Computer Vision Project</b> Developed a real-time restaurant occupancy and table tracking system using YOLO and pose detection to optimize restaurant operations. The platform analyzes live video streams to detect people, tables, chairs, and personal items, providing actionable metrics such as occupancy rates, waiting times, and table status. Built the dashboard interface to visualize metrics and insights.
2025/07 – 2025/09	<b>Colabios — Influencer Platform</b> A platform connecting brands with Instagram, TikTok, YouTube, and UGC creators. Features include creator profile management and a search system with filtering and pagination. Built with React, MUI, NestJS, PostgreSQL, and RESTAPI.
2025/03 – 2025/04	<b>Educational Platform – FullStack Project</b> A web platform enabling students to book learning sessions by subject and selected time slots. Built with React and NestJS, featuring both REST and GraphQL APIs, PostgreSQL database management, and real-time updates through WebSockets.
2024/03 – 2024/05	<b>Carpooling Web Application (PHP, Symfony, React)</b> Worked as part of a team to develop a carpooling web application, facilitating ride-sharing among users.
	<b>Online Library Management System ( Java)</b> <ul style="list-style-type: none"> <li>• Developed a comprehensive library management system using Java, applying object-oriented programming principles.</li> </ul>
2025/11	<b>Supervised Classification &amp; Model Evaluation (Academic Project)</b> <ul style="list-style-type: none"> <li>• Implemented supervised classification models using <b>Scikit-learn</b>.</li> <li>• Performed data preprocessing, feature selection, and model training.</li> <li>• Evaluated models using <b>accuracy, precision, recall, F1-score, and confusion matrix</b>.</li> <li>• Analyzed model performance and compared different classifiers.</li> </ul> <b>Technologies:</b> Python, Scikit-learn, Pandas, NumPy
2025/11 – 2025/11	<b>Unsupervised Learning: Clustering Analysis (Academic Project)</b> <ul style="list-style-type: none"> <li>• Implemented <b>K-Means clustering</b> using Scikit-learn.</li> <li>• Applied <b>Hierarchical Agglomerative Clustering (HAC)</b> using SciPy.</li> <li>• Analyzed intra-cluster and inter-cluster distances.</li> <li>• Interpreted clustering results and visualized group structures.</li> </ul> <b>Technologies:</b> Python, Scikit-learn, SciPy, Pandas, Matplotlib

## Professional Experience

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2025/08 – 2025/09	<b>Part-Time FullStack Developer– [TUNIDEV]</b> <ul style="list-style-type: none"> <li>• Developed the Search Page with filtering, searching, and pagination functionalities.</li> <li>• Built the Admin Dashboard, integrating backend APIs and frontend interfaces for platform management.</li> <li>• Maintained and optimized existing features to improve performance and user experience.</li> </ul>
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2025/07	<b>FullStack Developer Intern - [ TUNIDEV ]</b> <ul style="list-style-type: none"> <li>Contributed to the development of Colabios, a platform for brands to find and hire top Instagram, TikTok, YouTube, and UGC influencers to create unique content.</li> <li>Implemented entity setup and backend structures using PostgreSQL.</li> <li>Developed the Settings and Edit Profile section for creators, including CRUD operations for packages (frontend with React + MUI, backend with NestJS).</li> <li>Collaborated with the team to ensure maintainable, high-quality code.</li> </ul>
2024/11 – 2025/01	<b>Frontend Developer Intern - [ Colocqui ]</b> <ul style="list-style-type: none"> <li>Updated the website to enhance user experience.</li> </ul>
2024/07 – 2024/08	<b>Mobile Developer Intern - [ AVIDEA ]</b> Developed a module for importing photos from WhatsApp using Flutter and Firebase.

### Certifications

#### Certification : Web Scraping et Prompt Engineering

Acquisition de compétences en extraction de données web et en conception de prompts efficaces pour l'IA.

#### Data Engineer in Python – DataCamp (Ongoing)

- Building data pipelines in Python using Pandas and SQL
- Working with ETL concepts: data ingestion, transformation, and validation
- Handling structured datasets and preparing them for analytics and ML workflows

#### Working with the OpenAI API – DataCamp

- Built basic Python applications using the OpenAI API, including prompt design, API calls, and handling structured responses for data-driven use cases.

#### TOEIC Listening & Reading

- Score total : 855/990
- Reconnaissance de compétences avancées en **compréhension orale et écrite en anglais**.

#### AWS Concepts – DataCamp

- Understanding of cloud computing fundamentals, data storage, compute services, and basic cloud architecture concepts relevant to data pipelines and scalable analytics.

### Associations

2023/09 – 2024/06	<b>IEEE INSAT CS Chapter</b> <i>Member of the chapter, participated in workshops and events organized by the chapter</i>
2023/09 – 2024/06	<b>Junior Entreprise INSAT</b> <i>Senior member</i>
2024/06 – 2025/06	<b>Junior Entreprise INSAT</b> <i>RH manager</i> Human resources management, recruitment, member tracking, and organization of internal activities.

### Languages

English	<div><div></div></div>	French	<div><div></div></div>
Arabic	<div><div></div></div>	German	<div><div></div></div>