

DEMBA SOW

Machine Learning Engineer | Software Engineering Experience

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Proficient in Python, C++ and robust in JavaScript with over 2 years of experience AI, and machine learning, good in software engineering. Enthusiast about LLM, Generative AI, NLP and Skilled in designing and implementing AI models, including data preparation, labelling, model training, and testing. Experienced in image processing, computer vision, and clean code principles using OOP design patterns. Culturally diverse with a background as President of the Mauritanian Student Federation, an Erasmus exchange student and now Türkiye Maarif Foundation Student Graduate Leader. seeking opportunities to leverage my expertise in developing scalable machine learning solutions to solve complex problems in industry. Currently Enrolled as AI & Data Science Masters Researcher at Özyeğin University.

PROFESSIONAL EXPERIENCE

WORK3 TEKNOLOJİ A.Ş

Software Engineer – AI & Machine Learning

Sakarya, Türkiye
October 2023–Present

- Established processes for incident, problem, and change management, enhancing system reliability and operational efficiency.
- Developed full-stack applications with a focus on reliability and stability, ensuring robust performance.
- Worked closely with **cross-functional teams** to design and implement key features for internal applications.
- Developed and deployed multi-dimensional models and edge AI algorithms to enhance predictive accuracy, **improving patient outcomes by 20%**.
- Enhanced **AI model accuracy by 15%** through **hyperparameter tuning** and rigorous **cross-validation** using TensorFlow and Keras.
- Utilized cloud services such as AWS for deployment and data management.
- Managed **CI/CD pipelines**, streamlining deployment processes and reducing release times.

CARCHECKUP, MILENA SOFTWARE

Junior Software Engineer – Cloud & DevOps

England, UK
July 2023–September 2023

- Developed and launched a machine learning-powered car history report web application, **increasing daily visitor engagement by 300%**.
- Integrated UK and **Experian Data APIs** to enhance data accuracy and reliability.
- Optimized application performance, leading to a fourfold increase in daily visitors through effective content writing and code enhancements.
- Implemented **CI/CD pipelines**, streamlining the deployment process and reducing release times.
- Deployed and optimized machine learning **APIs on AWS**, reducing **inference latency by 40%**.
- Conducted peer code reviews and quality assurance activities, ensuring high-quality code and robust application performance.
- Contributed to the development, test and **deployment** of the android application for the product using **Google Cloud Console**.

PROJECTS

Image & Video Object Detection:

- Implemented **YOLOv5** for object detection in images and videos using C++ and **OpenCV**.
- Developed an **OOP** structure to improve code maintainability and scalability.

Ohara Bookshelf - Book Recommendation System:

- Developed a recommendation system using **content-based**, **collaborative filtering**, and **hybrid approaches** using **natural language processing tools (NLT)**
- Scraped data from Goodreads, handling 20,000 books and users, and integrated **emotion recognition-based Recommendation System using CNN**.

Llama 2 Chat Application:

Implemented a well-documented **Chat Assistance** using **Llama2**, **streamlit** and **replicate**

RAG - Retrival Augmented Generation Systems:

Implemented a well-documented **Generative AI & LLMs** with **RAG** system, using OpenAI's **GPT-3** tools with **cohere**, **weights & biases** and **waive**

Networks Comparison - CNN vs. MLP:

- Conducted a comparative analysis of **CNN** and **MLP** architectures on **CIFAR-10 dataset** using **TensorFlow** and **Keras**.
- Implemented various experiments to improve and evaluate model performance.

Multithreaded Image Convolution:

- Implemented a multithreaded convolution algorithm using C++ and **OpenCV**, optimizing image processing tasks.
- Used **OpenMP** for **parallel threading** and security features.

EDUCATION

- Sakarya University**, Sakarya, Türkiye
- Polytechnic Institute of Viana do Castelo**, Portugal
- Özyeğin University**, Istanbul, Türkiye

B.S. Computer Engineering - September 2019 – July 2023
Erasmus+ Study Grant - October 2021 – October 2022
Masters in AI & Data Science – September 2024 – Present

ADDITIONAL SKILLS

- Programming Languages:** Python | C++ | JavaScript
- Artificial Intelligence:** OpenCV | Numpy | Pandas | Keras | Tensorflow | Scikit-Learn | PyTorch | LLMs | Generative AI | NLP | Neural Network | Deep Learning
- Web Development:** HTML | CSS | Django | Node.js | Express.js | FastAPI | Next.js | Tailwindcss
- Software Engineering:** OOP Design Patterns | Clean Code Principles | DevOps
- Database:** MongoDB | PostgreSQL | MySQL | Firebase
- Tools:** Git | GitHub | Docker | AWS | Azure | Google Cloud | GNU/Linux

LANGUAGES

Fulani (**Mother Tongue**) | English(**C2**) | French(**C1**) | Arabic(**B2**) | Turkish(**C2**) | Portuguese(**B1**) | Spanish(**A2**) | Italian(**A2**)