

# Saif Mohammed

Systems and Biomedical Engineering Student

Egypt - Cairo | +201114313677 | ssaifmohammed04@gmail.com | linkedin.com/in/saif-mohammed-ali |  
<https://github.com/SaifMohammed22> | saifmohammed22.github.io

## Education

**Cairo University – Faculty of Engineering**

*Major: Systems and Biomedical Engineering*

*Expected Graduation: July 2027*

*Relevant Coursework: Introduction to Deep Learning, Linear Algebra, Calculus, Probability and Statistics, OOP, DSA*

## Skills & Abilities

- **Programming Languages:** Proficient Python (+2 years) Familiar Java(3 months), C++(3 months), JavaScript, Bash
- **Libraries & Frameworks:** PyTorch, TensorFlow, Numpy, Pandas, Matplotlib, Seaborn, Scikit-Learn, Gradio, Flask
- **Other:** Git, GitHub, CI/CD, Docker, Linux(Ubuntu)

## Experience

- **AI Developer intern at Siemens EDA** *July 2025 - August 2025*  
*Implemented AI-driven functionality for Siemens' tools using APIs, RAG System, large language models (LLMs), and prompt engineering.*

## Projects

**Seq2Seq Model From Scratch** GitHub | *Deep Learning, Sequence Models, LSTM*

- Implemented a Seq2Seq architecture based on Sutskever et al.'s paper "Sequence to Sequence Learning with Neural Networks".
- Developed an English–French translation system using this architecture with robust data preprocessing using the Eng–Fra parallel 34,802 pairs corpus with 38.32 BLEU score and 172.75 sentences/sec inference speed.

**Alzheimer's Disease Modeling with PINNs** GitHub | *Machine Learning, PDE - Collaborative Research Project*

- Developed a physics-informed neural network (PINN) to model tau protein diffusion–reaction dynamics in Alzheimer's disease.
- Improved PDE parameter prediction accuracy using symbolic regression for interpretability.
- Result: Advanced a reproducible codebase for computational pathology.

**Mymicograd** GitHub | *Machine Learning, Autograd*

- Implemented a minimal autograd engine following Andrej Karpathy's tutorial and reference implementation.
- Added a forward-mode engine to compare the performance of forward propagation vs. backpropagation, showing nearly a 100× speedup.

**Keras OpenVINO Contribution** GitHub PR #20982 | *Open Source, Python, Keras, OpenVINO*

- Implemented support for `numpy.dot` in Keras' OpenVINO backend.
- Authored and merged PR #20982, improving compatibility and model execution performance.

**Cars Model Classification** GitHub | Deeplearning, Fine-tuning, MobelNetV2 model

- Fine-tuned MobileNetV2 on Stanford Cars dataset (16k+ images, 196 classes).
- Achieved 86% test accuracy; explored transfer learning for large-scale classification.

## Honors & Awards

- **NASA Space Apps Cairo Local Winner & Global Nominee** *Oct, 2024*
- **4th Place – Undergraduate Engineering Mathematics Research Forum** *Dec 2024*  
*Cairo University – Technical Center for Career Development (TCCD)*

## Certificates & Courses

- AWS Educate Machine Learning Foundations *Jun, 2025*
- Introducing Generative AI with AWS *May, 2025*
- Advanced Learning Algorithms *Dec 20, 2024*
- Supervised Machine Learning: Regression and Classification *Aug 8, 2024*
- Intermediate Python *Apr 6, 2024*