Mahmoud Yosri

ML Engineer

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PROFILE

Passionate and detail-oriented ML Engineer with a profound understanding of how machine learning works under the hood. A self-taught practitioner, I cultivated my mathematical and theoretical expertise through MIT OpenCourseWare (Linear Algebra) and rigorous independent study of foundational texts, including *Mathematics for Machine Learning*, *Practical Statistics*, and the *Deep Learning* textbooks by Ian Goodfellow and Christopher Bishop. I specialize in architecting neural networks from scratch and optimizing complex AI models, dedicated to bridging the gap between theoretical mathematics and practical, high-performance implementations.

EDUCATION

Bachelor of Computer Science Sep 2020 – Jun 2024
Kafrelshikh University, Faculty of Computer Science and Information Technology
GPA: 2.9/4.0
Relevant Coursework: Linear Algebra, Probability, Statistics, Data Structures, Algorithms, Software Engineering.

EXPERIENCE & TRAINING

National Telecommunication Institute (NTI) *2024*
- Completed comprehensive training program specializing in Python for Data Analysis.

Huawei ICT Academy *2023*
- Participated in the HCIA-AI Learning Course, establishing a solid foundation in artificial intelligence principles and industry applications.

PROJECTS

Makemore Implementation (Autoregressive Language Model) *2025 – 2026*
- Developed a custom implementation of an autoregressive character-level language model from scratch, inspired by Andrej Karpathy's makemore library.
- Engineered diverse model architectures ranging from basic bigrams to complex Transformers akin to GPT, focusing heavily on under-the-hood mathematical operations.

Micrograd Implementation (Autograd Engine) *2025*
- Built a lightweight scalar library that implements core machine learning concepts, including backpropagation and neural networks, entirely from the ground up.
- Designed a PyTorch-like API, demonstrating a deep understanding of the mathematical foundations and calculus required to compute gradients efficiently.

AI Object Detection & Model Deployment *2024 – 2025*
- Deployed an SSD MobileNet model to enable real-time object detection capabilities.
- Integrated the ML model with a custom FastAPI backend, showcasing end-to-end model deployment and seamless API communication.

TECHNICAL SKILLS

- **Machine Learning & AI:** TensorFlow, PyTorch, Scikit-Learn, XGBoost, Neural Network Architecture, Backpropagation, Transformers.
- **Mathematics:** Linear Algebra, Probability, Statistics, Calculus for ML.
- **Programming Languages:** Python, C++, SQL, C#, Dart.
- **Data Science Libraries:** Pandas, NumPy, Matplotlib, Seaborn.
- **Backend & Tools:** FastAPI, Git, GitHub, SQLite.
- **Spoken Languages:** Arabic (Native), English (B2).

CERTIFICATIONS

- **Deep Learning Specialization** | Coursera *2025 – 2026*
- **Mathematics for Machine Learning: Linear Algebra** | Coursera *2025 – 2026*
- **Machine Learning Specialization** | Coursera Verification *2024*