Michel Omar Aflak

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LINKS

omaraflak.com
github.com/omaraflak
youtube.com/@independentcode

EXPERIENCE

Dec 2021 — present

Google — Software Engineer

London, UK

- MCP servers integration for Gemini in Play Console.
- Built experimental Gemini-based AI agents that interact with Android devices through UI to complete a given task. Finetuned custom models to resolve referring expressions into bounding boxes on screen. Built evaluation pipelines for monitoring agent progress. Wrote injection code for adding agent to any Android application with no developer intervention.
- Prototyped and wrote designs for a RAG pipeline to index app contents. Project raised $30M and aims at indexing 1B app pages/day. Allocated engineers on project.
- Leading engineering effort for injecting code in Android AppBundles — notably for the Gaming Platform project where we inject a full Gemini conversational agent into Android games. Distributing tasks to 1-2 eng, coordinating with design, product, and eng. Owning experimentation stack.
- Designed and implemented end-to-end patching feature for Android Deep Links, involving: modifications in GmsCore, implementation of a storage solution, development of data pipelines, creation of APIs, and the design of a web UI in Play Console.
- Launched the Deep Links page in Play Console. Developed several critical, time sensitive data pipelines responsible for processing data coming from 1.4B Android devices daily. Project led to the fix of 20% of App Links domains. Increased a stream of revenue by $xxM.

Feb 2021 — Aug 2021

Criteo — Software Engineer

Paris, FR

Redesigned from scratch, in PySpark, the pipeline that prepares data for training Criteo's machine learning models for Ads. The pipeline handles multi-terabytes of data daily. Improved processing time, -300% on memory usage, -125% on computation power, simpler code, and replaced old Scala codebase with Python. Developed a highly optimized C# code that transforms data for realtime inference. Reduced overall prediction time by 3%.

Apr 2020 — Aug 2020

Zenly — Software Engineer

Paris, FR

Developed a highly customizable and optimized graphical library on Android allowing to draw, animate, write text and play GIFs, on top of images and videos, including an undo/redo framework, with a focus on memory management. Improved H264 encoding settings.

Jun 2019 — Sep 2019

Twitter — Software Engineer

London, UK

Worked with Media Client Infrastructure team. Improved video quality on high speed networks by developing a bitrate prediction model, mobile side. A/B tested on 6M users, observed an increase in ads revenue by +0.56%, # of retweets by +0.74%, # of likes by +0.25%.

Dec 2018 — Feb 2019

RandomCoffee — Software Engineer

Paris, FR

RandomCoffee get employees in a company to meet each other based on their preferences. Generalized the way of expressing matching rules. Developed a matching algorithm (derived version of K-Medoid) that can match any number of people together instead of only 2 previously, given a set of constraints.

Jan 2018 — Feb 2018

Tribe — Software Engineer

Los Angeles, CA

Trained a neural network model, embedded on-device, able to recognize hand gestures on images. Tribe is a live multiplayer gaming platform that raised $6.5M from Sequoia Capital, Kleiner Perkins, and others.

NOTABLE PROJECTS

2025

Wormhole Simulation

Wormhole simulation by ray tracing light particles in curved spacetime, i.e. General Relativity.

2025 Mask Based Attention

Mask-based Attention is a research idea I explored, whose goal is to detect the ”useful” parts of an input for a given prediction task. Where ”useful” is defined as ”what can’t be removed so that the prediction is still accurate”. This leads to the idea of learning a model that predicts masks over the input.

2025 CUDA Tensor library

Pynn is toy tensor library developed from scratch, with a module for training neural networks. Tensor operations run in C or within CUDA kernels. The library has Python bindings for ease of use.

2023 Programming language

A programming language developed from scratch in C++. Despite the funky name I gave it, the Banana programming language has a scanner, parser, compiler, and a virtual machine.

2022 EIP-4671: Non-Tradable Tokens

EIP-4671 is protocol I designed for Non-Tradable Tokens on the Ethereum blockhain.

2021 YouTube Channel

After writing articles for many years, I decided to change my medium of expression. I started a YouTube channel February 2021 where I program mathematical concepts, such as neural networks, from scratch. The Independent Code.

2020 King Of Ether

King of Ether is an existing game that I reimplemented on the blockhain of Ethereum using Solidity smart contracts. The game is a Ponzi scheme in itself. To start the game, a player has to send ETH to the contract and becomes the so called ”king”. Then, every person that wants to claim the throne must send 30% more ETH to the contract and will become the new king. When this happens, the ETH of the new king are transfered to the account of the old king. And so on... If nobody claims the throne for 7 days in a row, the game ends, and the current king is dethroned and loses his ETH... https://kingofether.github.io.

2019 Leaf

Leaf is a device with radio capabilities that can be plugged directly into a smartphone. People using Leaf form a mesh network that allows them to communicate over long distances (up to 3 km between each node, and by jumping through nodes for longer distances) without any internet connection. This personal project was a proof of concept to demonstrate possible alternatives for private decentralized communications.
Leaf Project — Natural disaster communication system.

2018 Machine Learning Library from scratch

In 2017, I decided to learn AI and more specifically the in-and-out of neural networks. I taught myself by reading on the internet, and managed to get a strong understanding of how neural networks work, both mathematically and programmatically. I developed a machine learning library akin Keras on GitHub. I wrote an article on Medium that got published in Towards Data Science, and gave a talk/lesson within the organization School Of AI in Paris.

AWARDS

May 2016 Engineering Olympiad, Schneider Electric Paris, FR

“Best Scientific Innovation” award. 6th national place, 2nd regional place. Arrow impact prediction system.

May 2015 Engineering Olympiad, GRDF Paris, FR

3rd regional place, reached national competition. Gyroscopic mouse designed to filter essential tremors (movement disorder).

EDUCATION

Sept 2017 — June 2021 École Centrale d’Électronique de Paris Paris, FR

Sept 2018 — Dec 2018	INSEEC	London, UK
Sept 2016 — Jul 2017	Institut Supérieur d'Electronique de Paris	Paris, FR

LANGUAGES English: Fluent French: Native Arabic: Native