

Michel Omar Aflak, Software Engineer

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LINKS

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

EXPERIENCE

Dec 2021 — present	Google — Software Engineer IV	London, UK
	<ul style="list-style-type: none">• Building autonomous AI agents based on Gemini for Android. Built evaluation pipelines. Trained custom Gemini Nano models for bounding box detection on screen.• POC'd and wrote designs for a RAG pipeline to index app contents. Project raised \$30M to spin up new Android emulator farms and index 1B pages/day.• Designed and implemented end-to-end patching feature for Android Deep Links, involving: code 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 <u>Deep Links</u> 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, Data	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, Android	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, IOS	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, Backend	Paris, FR
	<u>RandomCoffee</u> 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, Machine Learning	Los Angeles, CA
	Tribe is a live multiplayer gaming platform that raised \$6.5M from Sequoia Capital, Kleiner Perkins, and others. Developed a mobile embedded machine learning model able to recognize hand gestures.	

NOTABLE PROJECTS

2024	ML library with GPU support
	A machine learning library developed from scratch. Most operations run in C/CUDA, but there are Python bindings for ease of use: <u>Pynn</u> .
2023	Programming language
	A programming language developed from scratch in C++. Despite the funky name I gave it, the <u>Banana programming language</u> has a scanner, parser, compiler, and a virtual machine.

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 blockchain 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 transferred 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