

ARIE ARYA

Software Engineer

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EXPERIENCE

Software / ML Engineer

Amazon

09/2022 - Present London, UK

- Full-stack developer for Alexa AI with focus on Automated Speech Recognition (ASR) and conversational understanding
- Deployed custom ASR models (e.g. Whisper) with AWS SageMaker
- Developed full-stack services and MLOps solutions with Java, Python, React, Swift, on AWS (CDK, Lambda, EC2, S3, EKS / ECS)

Software Engineer & Data Science Intern

AMD / Xilinx

04/2021 - 09/2021 London, UK

- Built high-performance DSP libraries for Xilinx ACAPs / FPGAs
- Automated library testing through an ML failure-causality tool built with decision trees and deep neural networks
- Created data analytics dashboards and QoR visualizations for hardware testing pipeline with Python, HTML, JS, and MongoDB

Undergraduate Researcher - ML & AI

Imperial College London

05/2021 - 09/2021 London, UK

- Implemented a graph neural network in PyTorch to optimize the resource allocation problem in MIMO wireless systems, achieving improved performance to baseline iterative methods (WMMSE)

CTO / Founder

Lyma

07/2022 - Present Bali, Indonesia

- Founded a startup to digitize menus through a mobile-friendly, QR-based platform; currently nearing deployment
- Built backend with Django, MySQL, AWS Lambda, S3, SQS, frontend with ReactJS, Tailwind CSS, and CI/CD with CodePipeline

IC Hackathon Participant - 2nd Prize

IC Hack 2020

02/2020 - 02/2020 London, UK

<https://github.com/ArieArya/WhatAMesh>

- Achieved 2nd place for building an off-grid radio communication system to connect remote / rural communities using a radio mesh network infrastructure and an iOS messenger app coded in Swift

AWARDS



Siemens Memorial Medal and Book Prize

Top ranked EEE student



Silvanus P. Thompson Prize

Top 2nd year EEE student



1st, 2nd, 3rd, 4th Year Dean's List

Top 5% in class



MVP Award UK

Top Indonesian undergrad in the UK for academic excellence

EDUCATION

MEng Electrical and Electronics Engineering

Imperial College London

09/2018 - 09/2022

- 1st Year: 81.84% (Top 5%)
- 2nd Year: 84.77% (Top in Class)
- 3rd Year: 83.67% (Top 5%)
- 4th Year: 84.48% (Top in Class)

Grade

84 / 100

Data Science and Statistics

Stanford University

06/2020 - 08/2020

- Data analysis and modelling with regression, classification, clustering, decision trees, and deep neural networks

GPA

4.0 / 4.0

Cambridge GCE A-levels

Dyatmika High School

08/2014 - 08/2018

- Math, Economics, Physics, Chemistry: **A*A*A*A***
- SAT Math II, Physics: **800, 800**

PUBLICATIONS - ML / AI

Graph NN for Financial Modelling

Imperial College London | ICASSP 2023

Arie Arya, Yao Xu, L. Stankovic, Danilo P. Mandic

<https://ieeexplore.ieee.org/document/10095381>

ICASSP 2023, Rhodes Island, Greece

Proposed a domain-aware graph pooling operator for hierarchical graph learning in stock markets (using graph neural networks). Resulting operator achieves improved trading performance on the S&P500 index and reduced computational cost compared to existing strategies.

CERTIFICATION

Architecting on AWS - Accelerator

Amazon Internal - 01/10/2022

Machine Learning Specialization

Stanford - Coursera - 02/2021

IBM AI Engineering Specialization

IBM - Coursera - 08/25/2020

TECH PROJECTS

TEDx Speaker - Solar Energy

📅 06/2017 - 06/2017 📍 New York City, USA
🔗 www.youtube.com/watch?v=_o36lwfJ4s

- Delivered a 12-minute speech in front of 200+ audience members about the idea of a 'Solar-Dependent Future', aiming to integrate small solar-related devices into our daily lives
- Created a prototype device of a small, eco-friendly solar tree, which uses solar energy to charge mobile phones

Project Manager - Imperial Consulting Group

📅 07/2019 - 02/2019 📍 London, UK

- Led a team of 7 students in a Santander Bank project to research the competition between High-street and Online-Only banks
- Delivered a presentation to the Santander Bank team to capture the niche of younger generations, including improvements in online banking, higher quality and fast-paced customer service, and more targeted packages

Stock Price Prediction with RNN

- Created an offline stock-trading simulator with Flask and real-time data from web API, deployed with AWS EC2 and Google Firebase
- Combined original trading signals (e.g. moving average) with sentiment analysis to make time series predictions with recurrent neural networks

Cryptocurrency Analytics & Web Scraping

🔗 <https://github.com/ArieArya/CryptoWebScaper>

- Built a Django REST API to perform web scraping and analytics of cryptocurrencies, deployed with AWS EC2 and SQLite DBMS
- Used Celery and SQS to perform asynchronous hourly web scraping, and used REST framework to handle external requests

Data Science & ML for Schizophrenia Patients

🔗 <https://github.com/ArieArya/SchizoAnalysis>

- Analyzed the efficacy of an experimental drug on treating patients with schizophrenia through RNNs, PCA clustering, and dimensionality reduction
- Performed binary classification of unreliable PANSS assessments with Random Forests and Boosting with an accuracy of 90%

Automatic Lecture Transcriber with Google BERT

- Developed a web app using the Google BERT (Bidirectional Encoder Representations from Transformers) and the Google Cloud API to automatically transcribe and summarize lecture notes
- Deployed using Flask through AWS EC2 with CUDA GPUs

NEAT Genetic Pathfinding Algorithm

🔗 <https://github.com/ArieArya/NEAT-Pathfinder>

Genetically trained a neural network to solve a pathfinding problem in a 2D matrix using the NEAT (Neuro-Evolution of Augmenting Topologies) library.

Autonomous Solar Rover

Built an autonomous sun-seeking solar rover which autonomously moves towards regions of light to charge its 24 mini solar-panel arrays. Used a series of phototransistors and an Arduino to control the motor driver logic.

CERTIFICATION

AWS Fundamentals - Cloud-Native

AWS - Coursera - 08/26/2020

Java Programming Specialization

Duke University - Coursera - 11/05/2019

SKILLS

Programming

Python Java C++ JS / TS

Objective C Swift Kotlin SQL

F# TCL Git Arduino

MATLAB Prolog Scala

Front-End

HTML CSS React / Redux JSX

Back-End

AWS SQL Django Flask S3

EC2 Lambda Redshift Kinesis

DynamoDB ReactiveX SQS

IAM ECS / EKS GraphQL REST

ML / AI

PyTorch Keras TensorFlow R

Bedrock ApacheSpark Jupyter

SageMaker HuggingFace Julia

FIND ME ONLINE

 **Personal Website**
www.ariearya.com

 **LinkedIn**
www.linkedin.com/in/arie-arya

 **GitHub**
www.github.com/ArieArya