Harith Al-Safi

Electronic & Computer Engineer | Software Developer

Leeds, UK · +447444585915 · @ harith.alsafi@gmail.com · https://harith.io/
github.com/harith-alsafi · linkedin.com/in/harith-al-safi

About me

An engineer with great enthusiasm towards data science and Artificial Intelligence. Some of my hobbies are working out, trading and investment. A deterministic outlook characterize my approach to tackling challenges.

Experience

Robot Engineer
Robot Fight League

Dec 2023 - Mar 2024 (4 Months) · Leeds, UK

- Designed a 3D CAD for robot fight league using Solidworks, Blender and Jira for project management
- Implemented a control system using Arduino and C++ for the robot's movement, sensors and pnuematic system
- Tested object detection and tracking using OpenCV and Python for the robot's vision system
- Managed a team of 5 engineers to develop the robot and compete in the league ending up 1st place

Frontend Developer
Velz Travel

Aug 2023 - Nov 2023 (4 Months) · Remote

- Directed the frontend of a travel web app for a startup built with Next.js, React.js and Typescript
- Developed user interface using Material UI following Figma design guidelines and business logic using Node.js
- Collaborated with developers using Jira and Git whilst working on Java Springboot with PostgreSQL and Docker
- Delivered app through CI/CD, agile development, unit testing with 93% coverage and AWS deployment

Software Engineer (Placement Year)
Johnson Controls

July 2022 - July 2023 (12 Months) · London UK

- Administered C \C++ projects while fixing bugs, adding features, refactoring and migrating 90% of codebase to C#
- Developed C# .NET libraries for fire detection simulations and data analysis improving operations by 32%
- Collaborated on an analytics web dashboard with React.js for predictive maintenance with dev ops and CI/CD
- Invented a custom scripting language with a compiler for C# app increasing development productivity by 40%
- Maintained Python automation scripts for automated builds of .NET applications and processing data with Azure
- Managed a team of 10 interns to create a business plan and ended up placing 2nd amongst the whole company

Software Developer Freelance
Paperound

Dec 2021 - Mar 2022 (4 Months) · Leeds UK

- Developed full stack web app using React.js, Next.js, MongoDB, auth0 for user authentication and REST API
- Created natural language proccessing applications using LLM's and Python for sentiment analysis and chatbots
- Built and trained a reinforcement neural network using TensorFlow, KerasRL for predicting stock prices
- Developed Serverless REST API with C # and Azure for IoT Sensors and data analytics using ASP.NET
- Developed low level ARM embedded systems with C whilst using memory allocation and register programming
- Engineered a high performance C++ linear algebra library for data science through Jenkins, Docker and Cmake

IT administrator
Mesopotamia Group

Jun 2020 - Mar 2021 (10 Months) · Amman Jordan

- Collaborated with a team to build a local file server on Ubuntu built using Apache and Nextcloud
- Administered the server using Bash, Python and Nmap with SSH tunneling and port forwarding
- Engineered a load balancer using MPI and C to distribute traffic between servers increasing availability by 34%
- Analyzed the network data logs using Python to predict and prevent cyber attacks
- Implemented Linux networking and protocols using IP addressing and routing for cloud hosting

Education

BEng (Hons) in Electronics and Computer
University of Leeds (UoL)

Sept 2019 - June 2024 · First-Class Honors

- Embedded systems, Microprocessors, FPGA, Circuit Analysis, Signal processing, Networking, Compiler design
- Cloud and Parallel computing, Secure and Distributed systems, Cybersecurity, Software Engineering, Research

👤 Skills and Languages

Technical: C \ C++ · Python · Java · C# · JavaScript · Linux · Docker · Azure · AWS · Jira · Git · Jenkins · Terraforms · Kubernetes · SQLite · MySQL · MongoDB · PostgreSQL · .NET WPF · JavaFx · React Js · QT Framework · Flutter · Flask · Springboot · ASP.NET · NumPy · KerasRL · Matplotlib · Pytorch · SciPy · TensorFlow · Pandas · OpenCv · CMake · Node.js · OpenCL · OpenGL · OpenMP · CUDA · Arm Mbed Os · Arm Keil · FPGA · Verilog HDL · Arduino · Blender · Photshop · AutoCAD

Soft: Management · Leadership · Motivated · Deterministic · Communication · Problem solver

Languages: **Arabic** (Full Professional) · **English** (Full Professional) · **Spanish** (Elementary)

≡ Projects

MCPP: High Performance C++ Library for Numerical Computation 📅 Apr 2021 - Oct 2022 📍 Personal
- Created a cross-platform math library for C++ used for matrix algebra, statistics and machine learning.
- Engineered with CI/CD using Jenkins, unit tests, Docker, Cmake, Doxygen and Git for version control
- Improved performance by 40% using parallel computing with OpenMP, OpenCL and CUDA

TBot: Machine Learning Stocks Trading Bot 📅 Apr 2021 - Oct 2021 📍 Personal
- Developed gradient boosting machine learning model using Python and Scikit-learn for stock prediction
- Anlayzed and processed data using Pandas, Numpy and Scipy for training and testing the model
- Backtested the model using historical data and simulated trading using Python and Matplotlib
- Developed a REST API and a user interface to interact with the bot using AWS, Flask and PyQT

Vega: LLM Chat Web App for IoT Circuits 📅 Oct 2023 - Jun 2024 📍 UoL
- Developed a full stack chat bot web application with Typescript, React.js, Next.js, TailwindCSS and NoSQL
- Programmed natural language processing algorithms using LLMs to interpet and execute user messages
- Developed a Python Flask REST Server with SQLite on the Raspberry Pi to communicate with the chat bot
- Engineered a circuit with sensors, fans, LCD and buttons to execute the user's commands from the chat bot

✿ Professional Courses

Data Analysis with Python 📅 Oct 2021
- Develop Python code for cleaning and preparing data for analysis
- Perform exploratory data analysis and analytical techniques to datasets using Pandas, Numpy and Scipy
- Manipulate data using dataframes, understand data distribution, perform correlation and create data pipelines
- Build and evaluate regression models using machine learning scikit-learn for prediction and decision making

Databases and SQL for Data Science with Python 📅 Sept 2021
- Analyze data within a relational database on the cloud using IBM DB2, SQL, Python
- Construct SQL CRUD operations and compose views, transactions, stored procedures and joins.

Python for Data Science, AI & Development 📅 Aug 2021
- Demonstrate proficiency in using Python libraries such as Pandas, Numpy, and Beautiful Soup
- Access web data using APIs and web scraping from Python in Jupyter Notebooks.

👥 Extracurricular

AI Agent hackathon 📅 Mar 2023
Lablab 📍 Remote

Web Developer hackathon 📅 Feb 2023
Royal Hackaway v6 📍 London, UK

Event Coordinator Volunteer 📅 Jan - 2023
IEE RAS ICRA 📍 London, UK