Harith Al-Safi

Electronics and Computer Engineer

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About me

An engineer with a great enthusiasm towards data science and Artificial Intelligence. I post regular workout and nutrition contents. Am quite fervent about blockchain, trading and investment.

Experience

Software Engineer Intern (Placement Year)
Johnson Controls R&D department (JCI)

July 2022 – July 2023 London UK

- Administered legacy C/C++ projects whilst fixing bugs and adding new features
- Developed C# .NET library on serial data analysis generation for embedded system programs
- Designing analytics web dashboard with React JS and using TensorFlow for predictive AI
- Lead 10 interns to create a full business pitch and ended up placing 2nd amongst 18 competitors

Hackathon Competition
Royal Holloway

Feb 2023 - 2 Days London UK

- Led a team to create a data science web app using Python Django, and Matlab for data analysis
- Supervised UI/UX designers on Figma designs whilst managing the developers
- Won multiple awards for the final delivery

Software Developer Freelance
Paperound

Nov 2021 – Feb 2022 Leeds UK

- Developed a book library management system in C
- Designed Python NumPy, SciPy and Scikit-learn scripts for neural networks and data visualization
- Programmed PowerShell and bash automation scripts for system administration

IT administration intern
Mesopotamia Group

Jun 2020 – Mar 2021 Amman Jordan

- Collaborated with a team to build a local file server on Ubuntu 18.04 LTS built using Apache and Nextcloud
- Administered the system using Bash and Nmap with SSH tunneling and port forwarding
- Engineered a complex version using a raspberry pie, network interface card and attached storage.

Education

B.Eng. in Electronics and Computer
University of Leeds (UoL)

Sept 2020 – June 2024 Y1: 88%, Y2: 79%

- Engineering and Discrete Mathematics
- Cloud and Parallel computing
- Electronics and Circuit analysis
- Communications and Signals
- Networking and Cybersecurity
- User interface and Compiler Design
- Microprocessors and Embedded systems

Foundation in Engineering and Computing
University of Leeds (LISC)

Sept 2019 – June 2020 93%

- Advanced Physics and Math
- Autodesk AutoCAD

IB Science certificate
Cambridge High School

Sept 2017 – June 2019 40/42

- Physics and Math
- Languages and Economics

Primary School
Cambridge High School

Sept 2007 – June 2017

- Basic primary school

Skills

C | C++ | Python | Java | C# | JavaScript | Dart | CSS | HTML5 | SQL | Matlab | Bash | PowerShell | Verilog | Assembly | Latex

Hard-working | Motivated | Deterministic | Leadership | Communication | Problem solver

Languages

English ●●●●●

Arabic ●●●●●

Projects

JPS
Sep 2022 - Jul 2023 JCI
- Re-designed a legacy CLI project to a GUI with C# .NET WPF using MVVM and multithreaded design
- Invented an object-oriented scripting language with a custom compiler and runtime memory access.
- Integrated SQLite database, Excel I/O features, analysis tools and serial communication protocols
- Communicated with engineers to get a feedback loop on the app's design and features

MCPP
Apr 2021 - Ongoing Personal
- Created a cross-platform math library for C++
- Engineered with DevOps using Travis-CI, testing with GoogleTest and building with Docker Cmake
- Incorporated numerical algorithms revolving around matrix algebra, statistics and machine learning.
- Documented using Doxygen and MkDocs

NotePad
Nov 2021 - Ongoing Personal
- Programmed a cross-platform note app with Flutter
- Established backend using cloud authentication services with Firebase and storage with SQL CRUD
- Using the BLoC pattern for state management and the Provider package for dependency injection
- Used KerasRL library for reinforcement learning with human feedback to predict user's next note

Home Automation Embedded System
Jan 2021 - May 2021 UoL
- Engineered circuits for I/O functionality using data sensors, potentiometers, buttons and resistors.
- Programmed control system for home appliances such as temperature, air conditioning and lighting
- Developed mini-OS using LCD display and joystick
- Operated on STM32 board, C++ on an ARM MCU

Tools and frameworks

Docker | Linux | Git | CI/CD | Microsoft Azure | AWS | IBM Cloud | Firebase | SQLite | IBM db2 | .NET | WPF | React Js | Qt | Flutter | NumPy | SciPy | Pandas | ROS | Django | Scikit-learn | OpenCv | TensorFlow | KerasRL | CMake | Logism | Office Suite | Arm Mbed OS | Arduino | Multism | Intel Quartus Prime | AutoCAD | FPGA

Professional Courses

Data Analysis with Python
Oct 2021
- Performing data wrangling such as formatting and pre-processing
- Statistical correlation between datasets such as the Chi-Square for categorical variables
- Modelling data into linear and polynomial regressions
- Model deployment using regression pipelines
- Model training and evaluation

Databases and SQL for Data Science with Python
Sept 2021
- Relational database structure
- Advanced SQL syntax and its integration with python
- Using SQL to retrieve selective data from CSV files

Python for Data Science, AI & Development
Aug 2021
- Basics of Python and object oriented programming
- Quick summary of pandas and Numpy
- Viewing projects such as retrieving cryptocurrency data

Data Science Methodology
Aug 2021
- Understanding different approaches to data science
- Looking at case studies regarding data collection and requirements

Tools for Data Science
Jul 2021
- Using Jupyter Notebook
- IBM tools such as IBM Watson Studio

What is Data Science?
Jun 2021
- Introduction to data science and big data
- Structure of data science reports

Matrix Algebra for Engineers
Nov 2020 - Jan 2021
- Basics of matrix algebra and properties of matrices
- Linear algebra and its use in statistical analysis