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Muhammad Ahmad

MEng Computer Science with Artificial Intelligence - The University of Leeds

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Personal Profile

I am deeply interested in Computer Science. I have gained online certifications from Udemy and Coursera (courses are presented by esteemed universities such as the Higher School of Economics - Russia). These include courses on web development using the MEAN stack, the Coursera Deep Learning Specialisation and many more.

I have experience with React (MERN stack) and React Native. My most recent projects include developing a commercial learning app using React Native for the Ahmadiyya Muslim Association called SalatHub (<https://salathub.co.uk/>). I was the **sole** developer on this project and had to work on a very tight deadline, along with managing my time for my exams and coursework at University. I lead the project from the design stage all the way to deployment and product listing on the iOS and Play Store. Along the way, I had the opportunity to work very closely with an experienced UX and UI designer. The app's design was provided on Figma and had to be translated and modified to look good on the Apple App Store (iOS) and Android Play Store. Being the sole developer on this project meant I had **to interact with various stakeholders**, deciding what features needed to be prioritised for a successful product release (due to a tight deadline) and what could be left for a future release. I ensured that intensive testing, both technical and user based, was carried out before launch, which allowed problems with the app to be removed before launch. The **entire** application was tested by many individuals on Android and iOS phones, along with **qualitative user use case studies**. An agile development methodology was used, where the different members of the team regularly carried out **iterative testing** of the application, which allowed for early detection and removal of problems with the app. This [promo video](#) was used as part of the successful marketing campaign and shows the many features that the SalatHub app provides. Overall, the project was very successful and was launched by the international **Head of the Ahmadiyya Muslim Community** at a convention (

The courses on MEAN stack were based on Angular (i.e. Angular 2+ not AngularJS) as a front end and Node.js as a backend. The common language used throughout was Typescript (i.e. a variant of ES6+ JavaScript). During the deep learning specialisation, I gained a deeper intuition of neural networks by developing them from scratch. Throughout the course, I had to implement various neural network architectures such as Fully Connected Deep Neural Networks and Convolutional Neural Networks (CNN). The Fully Connected neural network was made from scratch in python whilst the CNNs were implemented using TensorFlow (again in python).

I also helped develop a commercial accounting package for OneSys Financial Ltd and developed a dashboard system for Kiren Foods Ltd. The accounting package's front end was developed in Visual Basic and Windows Forms were heavily utilised, and the backend was developed using MSSQL. The dashboard system, for Kiren Foods, was developed as an Angular application.

During GCSEs I also developed an event management system for my school. The aim of this system was to make the process of organising the different house events more efficient. The software was developed using ASP.Net Core MVC.

In Year 10, I was given the role of House Captain in my school. This role involved me being responsible for all the activities of the Mackintosh House. It was my duty to organise the captains under me and the numerous competitions and events that the House held. As part of this, I had to give presentations and to communicate efficiently with people. This role helped me develop my leadership skills as well as my communication skills, allowing me to

communicate effectively to people of various ages. I believe that my communication skills will help me a lot to efficiently relay information to customers in a manner that they understand. I had to work as part of a team in which I interacted with people of various natures, and I believe that this will also be a crucial skill for my professional career.

I spent my gap year working and giving back to the community by offering free Game Development classes to children and Adults. I also worked for Khaos Control, a leading ERP and Business Management Software provider. I have worked on numerous development projects as part of this role. I have been exposed to new technologies such as Delphi and Windows Forms and testing methodologies such as Black Box Testing. I have also observed how to maintain a sizeable common codebase for different applications, ensuring that inconsistencies do not appear between the two applications' core codebases. Throughout this role, I have interacted with the various departments and have gained experience working in a highly robust organisation.

I have extensive experience developing full-stack applications using React and Angular on the front end and Node.js / Express or .NET on the backend. I have also developed many projects using React Native and Ionic using Firebase and Node.js, and Express as the backend. I have completed numerous projects using TensorFlow and Keras in Python related to business analytics and general Machine Learning and Deep Learning projects.

Most recently, I worked as a Software Engineer at AB Dynamics, a market-leading vehicle testing company. The company carries out automated testing of cars from leading car manufacturers and are a market leader in this market segment. As part of my role, I mostly work with C# and .NET Core. AB Dynamics utilises modern development and management tools like Jira and SourceTree to streamline the development process.

Employment

Khaos Control, Grantham.

Dec 2019 – Jan 2021

Full time Application Developer.

In my gap year, I worked at Khaos Control as an Application Developer. My tasks included:

- **Ticket Triaging:** Any new problem or issue raised by the Support Team related to the development team would go through me. I would decide on the priority of the ticket from the point of view the Development Team
- **Ticket Resolving:** I would make fixes for High priority tickets raised by the Support Team and patch these back to the release versions (using TortiseSVN). This also included logging into customer's live system and trying out of the box tricks to resolve issues.
- **Stale Tickets:** Any ticket that had gone stale i.e. not resolved in a long time was assigned to me. These tickets were not straightforward and required out of the box thinking and quite a lot of effort to resolve. I resolved numerous stale tickets at Khaos Control.
- **Developments Projects:** Customers who wanted to change the system would raise Developments. I would then be given a subset of these to work on. Developments assigned to me ranged from the simple GUI Change to complex changes that talked to external APIs.

AB Dynamics

Oct 2021 – Oct 2022

Software Engineer

- C# and .NET Framework along with WPF
- Developed transponders features in GTC:
 - Communication with server side
 - Transforming server-side messages to data and events that the GTC Client can use
 - Developed transponder properties editor panel and underlying functionality
 - Show transponders on vehicle grid
- Notification feature
 - Laid down groundwork for communication with server for toast notifications
 - Developed SOS toast notification feature
 - Notification Centre designed by me
 - Updated Notification design
 - Worked on other Notification Centre features with another colleague
 - Used design principles to ideate images mock up for notification on maps
- Smoke testing before release
- General sprint planning, code review etc

SalatHub

Lead Software Engineer (Sole Developer)

- React Native (JavaScript).
- Platforms: iOS and Android.
- Only developer on the team, working to a very tight deadline.
- Leased with different stakeholders (client, end users, design and ideation team)
- Managed Project Sprints, ensuring all members of the team were being utilised
- Agile Sprints, with testing carried out regularly by members in different teams. All errors collated in one place and fixed
- Due to an international target audience, there was a very high bar of success:
 - Extensive stress testing carried out on numerous Android and iOS devices (different models) and any bugs fixed
 - Use case studies carried out with selective end users (qualitative evaluation) to ensure that the mobile app was intuitive
- Submitted to Apple App Store and Android Play Store for approval before launch at a national convention.
- App has been launched successfully and has a large international audience, along with a very high positive rating and reviews by end users. (www.salathub.co.uk)

Udemy Course Instructor

I am the creator of the following best selling courses on Udemy:

1) [Build a Graphical Operating System from Scratch:](#)

In this course I take the student from a blank file all the way to a very simple but functioning operating system that can be run on a real computer using a bootable usb.

In the course, I teach assembly programming, low level c programming, mouse and keyboard input, rendering colours, rendering text, rendering simple primitive shapes, simple task manager etc.

The course has been highly rated and has an international audience on Udemy.

2) [Build a Ray Tracer \(Graphics\) from Scratch:](#)

This course gives the student an introduction to how light works around us in the real world. Ray tracing is different from traditional Computer Graphics: traditional computer graphics "emulate" or mimic how light behaves whereas Ray Tracing attempts to "simulate" how light works in the real world. As such, the intuition gained in this course allows the student to partially answer the question many of us had as a child: how does a simple light ray lead to the beautiful and colourful world around us?

This course has an international audience and is highly rated on Udemy.

Education

University of Leeds, School of Computer Science 2020 – Present
MEng Computer Science with Artificial Intelligence

The Priory Ruskin Academy (Sixth Form)
2016 - 2019

A Levels: AABBB, Mathematics – A, Chemistry – A, Physics – B, Biology – B, Further Maths – B

The Priory Ruskin Academy
2012 – 2016

GCSEs: Achieved 10 GCSEs, 9 A* and 1 A (English Language) and ECDL

Academic Projects

Year 1: Conway's Game of Life – I built a simulation for the famous Conway's game of life that utilised SDL for the graphical element. The simulation is interactive: for example, its speed can be increased or decreased.

Year 1: COVID-19 Information Website – I built a website using raw CSS styling about COVID-19. The website included a nice responsive design and it met all the Web Accessibility Standard tests.

Achievements

- Outstanding Achievement in Chemistry, Further Mathematics and Biology at A Level
- Overall Outstanding Achievement and Progress in GCSEs
- I have been awarded numerous certificates from online learning platforms such as Coursera and Udemy. These include the Deep Learning Specialisation from Coursera and courses on Advanced Machine Learning from the Higher School of Economics in Russia. Please have a look at my LinkedIn Profile for more details on this: <https://www.linkedin.com/in/muhammad-a-747540142/>

Interests / Hobbies

- Game development: I love to develop games in unity. I have developed a few 2D games in unity from scratch. Currently, I am developing a 3D First Person Shooter game that utilises many different technologies such as Procedural Level Design using Houdini and Unity's new Animation System.
- Deep Learning and Machine Learning: I have completed many courses online to understand more about deep learning and machine learning: from Convolutional Neural Networks to recognise objects to actually implementing Deep Neural Networks from scratch.
- I regularly teach children from my local area game development skills and website development.