MATTHEW HAYWOOD

Graduate Software Engineer

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Education

University Of Nottingham
MEng Electronic and Computer Engineering with Year in Industry
2018 - 2023

Programming Languages

Python (1 Year)
Java (1 Year)
C++
JavaScript (Node.js)
TypeScript
MATLAB

Tools and Frameworks

Git
Dagger
Mockito
Junit

Cloud Technologies

AWS
Lambda
S3
DynamoDB
Athena
Kinesis
CDK

Microsoft Azure
Deploying Node.js applications from Github

Profile

Recently completed a Masters of Engineering in Electronic and Computer Engineering with a year in industry at The University of Nottingham. Thoroughly enthusiastic and motivated student seeking a graduate software developer/ engineering role.

Key Skills

- Excellent Analytical and problem solving skills.
- Proficient in multiple programming languages.
- Innovative Design skills.
- Excellent communication skills, both written and oral.

Experience

Amazon Web Services - Software Development Engineer Internship,
11 Months, June 2021 - May 2022 (Cambridge, UK)

Designed and developed an internal Business Intelligence platform for recently released AWS service. This platform used a data pipeline to regularly aggregate customer data across the whole service to be displayed in a central dashboard. The internal platform is used by Project Managers and Engineers to analyse customer behaviour of the AWS service. This platform was implemented using Java and TypeScript programming languages. Testing frameworks and dependency injection tools such as Dagger, Mockito and Junit were also used.

Chaired and attended daily stand-ups, 1:1's and team meetings where I developed my interpersonal and communication skills interacting with engineers and project managers, communicating my design in an engineering environment.

University and Personal Projects

Mesh Simplification by Edge Collapsing - Final Year Project

Developed an algorithm, using C++, to perform mesh simplification on 3D objects by using the edge collapsing technique. Algorithm is able to cluster triangles, simplify and reduce mesh objects using an iterative method.

Cloud Server

Designed and developed a Node.js server for uploading and storing files, photos, videos and data, which can stream video for large video file playback. Server can also store data in JSON format, has a Python API, can perform scheduled customisable functions and many other features.

3D Graphics Engine

Developed a custom 3D graphics engine using Python. PyGame and NumPy libraries were used to perform various matrix transformations and render triangles to the screen. This program included back-face culling, clipping, orthographic rendering, shading, CAD functions (extrude and draw polygon tool) and model loading.

Web Development

Completed web development course in which I gained valuable knowledge about the MEAN stack, databases (MongoDB) and restful routing. Used skills gained above, to design websites and web applications using Node.js, HTML, CSS and JavaScript. Continuously honing and improving my personally designed websites (property management and personal storage sites). Proficient in frontend and backend programming including HTML, CSS, JavaScript and Node.js.

Robotics

Excellent at design and build skills, using a 3D printer and electronic components. I was able to show this by designing and putting together a DSLR camera pan and tilt time-lapse rig from 3D printed parts, stepper motors, belts and stepper drivers. Using a Raspberry Pi microcontroller and touchscreen, I am able to interface with and control the system.

MRI Lung Imaging Spectrometer

During the summer of 2014, I spent four weeks building and programming a piece of equipment at the University of Nottingham Medical School. The equipment will be used as a spectrometer in MRI lung imaging. This was extremely beneficial in terms of consolidating my skills in electronics, programming in MATLAB and the theory of how Xenon gas is hyper-polarised.

Education

University Of Nottingham — MEng Electronic and Computer Engineering, October 2018 - July 2023

Dixie Grammar School, Leicestershire

A-Levels: BBC in Maths, Chemistry and Physics.

GCSE: A*A*A*AA in Chemistry, Physics, Biology, Maths and English.

References are available upon request