Kit W. **Thornton**

Full stack Developer · Graduate Aerospace Engineer

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Summary

With an excellent academic record and a wealth of experiences from full-stack development to ultra marathon running, I can confidently take ownership of a project and bring the best out of my peers. I am now actively seeking a full-stack developer role in an agile company that makes a positive impact on the world.

Education

University of Bath — *Bath, UK*

MEng (Hons) in Aerospace Engineering — *Sept. 2014 - June 2019*

- Degree: First Class Honours
- Thesis: Mathematical modelling of complex aerodynamic behaviour, First Class

Bromsgrove School — *Bromsgrove, UK*

A Levels & GCSEs — *Sept. 2010 - June 2014*

- A Levels: Mathematics A*, Physics A*, Further Mathematics A, Chemistry A, French A (AS Level)
- GCSEs: 10 A*s and 1 A. Including Mathematics, French, English and three sciences

Professional Skills

.NET ⇒ I have used .NET Core extensively and have since gained proficiency in C#. I have created several web applications in personal and professional contexts using both MVC and Web API. Recently I have been creating ASP.NET REST API projects that communicate with *MS SQL Server* and *PostgreSQL* databases alongside React.js front end apps. I'm familiar with core .NET principles such as the CLR, memory management and garbage collection.

C# ⇒ C# is a fantastic language that I have loved using the past two years. I love being able to apply the core OOP principles to applications which ensure that my code is versatile and maintainable. I have knowledge of *LINQ*, *AJAX* and *Web Services*.

React ⇒ I am enjoying using React in both professional and personal projects. I have improved my *ReactJS* skills through the studying of core principles, e.g. the React Life cycle, alongside building beautiful and succinct UIs. I use *Redux* to manage and centralise state to create scalable and maintainable apps.

SQL ⇒ I became a key member of the Database Guild at FNZ through my proficiency in *Microsoft SQL Server*. I have additionally used *Azure Data Studio* and *PostgreSQL* in personal projects. I have written and optimised stored procedures, functions and triggers. I have created complex DB architecture for financial systems alongside monitoring code releases through platform performance investigations.

Node.js ⇒ I am currently using Node.js as the back-end for my personal project. I have been able to translate complex logic and framework from C# into JS. I have been able to communicate with a *PostgreSQL* DB and utilise a *ReactJS* front-end.

DVCS ⇒ I have used Git when managing personal projects and am familiar with the core operations. I'm experienced with *Accurev* in a professional setting where I have managed code releases and aided CI management.

Testing ⇒ *NUnit* and *xUnit.net* are my go-to unit testing libraries when using *.NET Core*. I'm familiar with integration testing and have recently explored *Jest* for testing my React apps.

Python ⇒ I'm familiar with data manipulation techniques and data science packages including pandas.

Agile ⇒ I have worked in an agile development setting since Jan '20 where I enjoy the versatility and efficiency of working in scrum teams. I can also accurately size stories, aid management in sprint planning and conduct retrospectives.

Experience

Freelance Web Developer — *Warwickshire, UK*

Digiworkz — *June 2021 - present*

- As part of Digiworkz' campaign to increase the user engagement of their online platforms I created and hosted a 10-page site using HTML, CSS, JS which can be accessed here: `http://www.insights.digiworkz.com/home`. Managing client expectations and other projects was a challenge that I relished in this role. I learned a great deal about front-end development and web hosting.

Freelance Web Developer

Warwickshire, UK

Exhall and Wixford Cricket Club Website

Sept. 2021 - present

- I am undertaking a project to create a statistics website for my local cricket club. This has included creating the entire project architecture using **GIT for version control**. The website will be hosted on a public domain in September 2021 using **AWS**.
- Firstly, I created the **DB architecture in PostgreSQL** which included using **Boyce-Codd normal form** to minimise data redundancies. I have written functions and stored procedures to create a Data Access Layer (DAL) whereby I can obtain data by team, season, player and other parameters.
- I have then used **NodeJS** with **Express.js** and **node-postgres** to query the DB and contain business logic. I then integrated a ReactJS front-end to allow communication between the DB and UI. I then used CSS frameworks such as **MaterialUI** and **Recharts** to create a UI whereby key statistics could be viewed and the site navigated seamlessly.
- This project has taught me the value of being **self-disciplined** and ensuring that the I continually make progress. I have used project management software **Zoho** to keep on top of tasks, milestones and issues through the use of a Kanban board.

FNZ Group

Brno, Czech Republic

Graduate Software Developer

Sept. 2019 - May 2021

- I worked as an all-rounder who **analysed required system changes, designed databases, wrote complex financial business logic and created slick web applications.**
- My responsibilities included building new platform features in-line with the client requirements and also defect fixing to ensure that the platform runs smoothly. These tasks included anything from an hour's work to a week's depending on the scope of the task. The frameworks I use are **.NET Core** and **ASP.NET** with the primary back-end languages I use are **C#** and VB.NET. The front-end languages/packages I used were React.js and Bootstrap which I found extremely exciting! Finally, I use Microsoft SQL Server in the capacity of writing and optimising views and stored procedures alongside querying including joins, defining relationships, indexes and automated actions.
- I **work closely with testers and other members of the project team** to produce efficient software enhancements. Therefore, I have studied financial and business logic extensively and undertaken industry-specific training.
- I worked in an Agile team under SCRUM methodologies. I aided in planning and sizing sprints through estimating the time taken for specific developers to complete tasks. I enjoyed this side of development as it taught me a significant amount about management and sprint planning.

University of Bath

Bath, UK

Final University Year

Sept. 2018 - June 2019

- I explored the aeroelastic behaviour of a NACA0012 wing through the use of a water tunnel. This project allowed me to delve deeper into the fundamental aerodynamic principles of fluid-structure interaction. I combined in-depth **time-management skills through a Kanban Board** alongside a rigorous experimental method to ensure that the limited window of testing available is utilised entirely. I then undertook an **extensive data manipulation process which included extracting Fourier transformations and vector manipulation on large quantities of data; predominantly using MATLAB and Python.** I also used flow-visualisation techniques such as Particle-Image Velocimetry. **These processes, alongside good oral presentation skills, allowed me to achieve a first-class grade in my thesis.**
- Three of the modules I undertook were Computational Fluid Dynamics (CFD) and Advanced Helicopter Dynamics (AHD) and Systems Modelling and Simulation. **These modules provided a sound combination between a broad theoretical background and the application of this knowledge into physical models**. I have used ANSYS CFX to simulate the flow within a static mixer and optimise the geometry to promote mixing of two fluids. Within AHD I have constructed a Blade Element Momentum Theory (BEMT) hierarchical model within MATLAB to determine the optimum geometry of a wind turbine that will extract the maximum amount of power from the airflow for a given location. **I achieved the best mark in my cohort for my report**. Finally, I have constructed static and transient Finite Element Method models that were used to investigate the required thermal protection provided by a piece of clothing to ensure 2nd Degree burns did not occur.

Other Interests

Sports — I am a keen and capable sportsman and have played cricket, football, rugby and hockey for many years. I captained the 1st XI Hockey team and 2nd XI Cricket teams at school alongside competing regionally in both sports. I enjoyed partaking in inter-company football and rugby tournaments whilst at FNZ and cricket games whilst at GE Aviation.

Travelling — I love to travel, experience new cultures and gain valuable life lessons and stories. Much of the money I earn working goes towards these experiences. I would love to do the Trans-Siberian railway next summer!

Fitness — I have run several half and one full marathon in aid of different mental health charities. A group of friends and I have recently run an Ultramarathon around the coast of Jersey to raise money for the charity Mind.

Languages — I am a confident french speaker and have progressed to B2 level through weekly lessons. I also know introductory German and am A1.

Mountaineering — I am a passionate climber, hiker and mountaineer and enjoy exploring whichever country I am living. I have also completed winter and summer summits throughout the Alps and am always planning more adventures.

Chess — I am an avid chess player and have competed in several regional tournaments.