Isaac Vieira

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Education

Cardiff University – Bsc Applied Software Engineering (Expected Grade: 1st) **2021 - 2024**

Key Modules:

- Software Development Skills 1 & 2, Computational Thinking, Fundamentals of Computing with Java, Database Systems, Commercial Applications with Java, Agile Project Management, Cyber Security, DevOps, Performance and Scalability, Mobile Development, Commercial Frameworks, Languages and Tools.

Norton Knatchbull Grammar School for Boys **2016– 2021**

A Level: Computer Science, Business, Psychology

GCSE: **8777666544** including **Mathematics (7)** and **English Language (7)** and **Computer Science (8)**

Skills

- **Programming Languages**: Java, C#, Python, JavaScript, gLua, Lua
- **Tools, Technologies, and Frameworks**: SpringBoot, Gradle, React, Git, Flask, Express Server, Node.js, D3.js, Nivo, Jest, Junit, AJAX
- **Tech Stacks:** MERN
- **Methodologies/Techniques:** Agile, Scrum, Extreme, Pair programming
- **Database:** SQL, MariaDB, MongoDB, Firebase
- **CI/CD:** Jenkins, Gitlab CI/CD

Work Experience

EPIDEMIC GAMING, FULL STACK DEVELOPER **June, 2019 – January, 2020**

- As a Full Stack Developer at Epidemic Gaming, I was tasked with utilizing gLua (Garry's Mod adaptation of Lua, an open-source programming language) and SQL to design, implement, and deploy an interactive game server. This server enabled concurrent gameplay and interaction for a community of users, managing up to 40 players simultaneously during peak times.
- My role involved:
  - Designing and coding the server infrastructure using gLua and SQL.
  - Collaborating closely with players and other server developers to brainstorm and develop innovative features and enhancements.
  - Conducting thorough testing of existing features to identify and resolve bugs, thereby improving overall gameplay and user experience.
- The results of my actions included:
  - Successfully launching a robust and scalable game server that supported 40 concurrent players without performance issues.
  - Enhancing user engagement and satisfaction through continuous feature updates and improvements, as evidenced by positive feedback from the player community with a 350% increase in player count within a month.
  - Maintaining a high standard of server performance and reliability, with a significant reduction in bug-related issues post-deployment.

Notable Projects

ENERGY USAGE DATA VISUALISATION WEBSITE (CURRENT PROJECT) **November, 2023 – November, 2023**

- I am part of a five-member team developing an Energy Usage Data Visualization Website for the UK Energy Research Centre (UKERC). Our project was initiated in response to the UKERC researchers' need for an improved solution, as their existing system using PowerBI was experiencing slow performance and frequent crashes. The primary objective is to create a platform that processes and visualizes large datasets, allowing for effective presentation of energy usage data to researchers and the public.
- During the project, my key contributions include:
  - Employing Agile methodology with my team to manage the development process effectively, using weekly user story assignments.
  - Leveraging the MERN technology stack (MongoDB, Express.js, React, Node.js) to build the core of the website.
  - Incorporating the Nivo graphing library to provide intuitive and engaging data visualizations.
  - Developing secure data upload functionalities for authorized accounts and optimizing data processing workflows.
- The current progress of the project has led to significant achievements:
  - A working prototype of the website that outperforms the previous PowerBI solution, with up to 200% faster loading and visualization of data, as evidenced by benchmark tests.
  - Positive preliminary feedback from the UKERC researchers, highlighting the enhanced speed and stability of our solution compared to their former system.
  - Anticipation of our project potentially being selected for the researchers' website, reflecting its superiority in handling and visualizing large datasets efficiently.

HEALTH-FOCUSED BARCODE SCANNING ANDROID APP **May, 2023 – May, 2023**

- In my role as a Full Stack Developer, I led the development of an Android application aimed at assisting users in making healthier food choices. The app, written in Java, allowed users to scan or input food product barcodes, leveraging the Open Food Facts API to present vital health information such as the degree of processing and a health score.
- My contributions to this project encompassed:
  - Developing both the front-end and back-end of the app in Java.
  - Integrating the Open Food Facts API to provide detailed health information based on barcodes.
  - Utilising Firebase for user authentication, enabling Google sign-in and preference synchronization across devices.

    - Implementing a personalized allergy alert feature, where the app would notify users if a scanned product contained any of their specified allergens.
- The successful completion and functionality of this app led to:
    - A user-friendly tool that efficiently delivered health information, significantly reducing the time users spent analysing product ingredient lists.
    - Valuable feedback from test users who appreciated the app's utility in managing dietary preferences and allergies.
    - An accolade of achieving a 1st class mark for this project, underlining its excellence in design, functionality, and user experience.s

EMPLOYEE MANAGEMENT SYSTEM **November, 2022 – December, 2022**

- I was tasked with developing a comprehensive Employee Management System for Graphium.AI. This project's objective was to create a front-end and back-end system that would enable supervisors to efficiently manage their employees. Key functionalities required included organizing meetings, viewing analyses of employee and supervisor well-being, and managing supervisor-employee relationships, all based on a detailed brief and requirements from the company.
- My contributions to this project included:
    - Formulating a development plan and executing both front-end and back-end system development.
    - Adhering to the agile methodology throughout the development process, which involved organizing sprint meetings to manage workflow.
    - Taking on the role of Scrum Master, where I was responsible for organizing the team, constructing user stories, and prioritizing tasks based on their importance and impact.
    - Utilizing a combination of technologies including HTML/CSS, JavaScript, Java, SQL, and Spring frameworks (Spring Data, Spring Security) to build the system.
- The project culminated in:
    - Successful delivery of a fully functional Employee Management System, which met 100% of the client’s requirements both visually and functionally.
    - Enhanced operational efficiency for supervisors at Graphium.AI, as evidenced by positive feedback and increased productivity metrics. Receiving a satisfaction score of 4/5 from the client.
    - Recognition for exceptional project management and technical skills, as demonstrated by my role as Scrum Master and the smooth execution of the project.

MAP ANALYSIS TOOL FOR GAME RUST **December, 2021 – December, 2021**

- The project involved creating a .NET application for the game Rust, aimed at enhancing player experience by scanning maps of online servers. I was tasked with developing a tool that could quickly identify servers based on specific map criteria, such as monument types and their proximities, as well as biome types. This tool was designed to cater to the needs of players seeking specific map configurations for strategic gameplay.
- In this project, my key actions included:
    - Designing and programming the application to scan tens of thousands of online Rust servers and filter them based on user-inputted criteria.
    - Implementing threading techniques to accelerate the map filtering process, thereby boosting the tool's overall search speed.
    - Utilizing HTTP requests to retrieve map information from the game through the API of a popular server browsing website.
    - Extracting and processing JSON data from server browsers' HTTP responses to pre-filter servers, focusing on those that were active and online, to efficiently manage the rate limitations imposed by the API.
- The development and implementation of this tool yielded:
    - A significant increase in efficiency for Rust players in identifying suitable game servers, as evidenced by the tool's ability to swiftly filter through large numbers of servers.
    - Positive feedback from the UnknownCheats gaming community for the tool's effectiveness in enhancing their strategic gameplay experience.

Achievements

TOP 10 CARDIFF UNIVERSITY 100 BIG IDEAS COMPETITION **November, 2023 – November, 2023**

- The competition was centered around innovative and impactful business ideas. I participated with a proposal for an independent body contracted by the UK government, dedicated to assessing the Carbon Emissions/Neutrality of businesses across the UK. The concept was inspired by the government's food safety ratings system, with the goal of providing a similar, transparent environmental impact rating for businesses.
- To achieve this recognition, I:
    - Developed a detailed business plan outlining how the independent body would function, including the process of inspecting and assessing businesses for their carbon neutrality.
    - Proposed a rating system that would be visibly displayed at business establishments, akin to the existing hygiene rating system, allowing consumers to make informed choices based on a company’s environmental impact.
    - Conducted thorough research to substantiate the growing need for businesses to achieve net-zero emissions and the importance of consumer awareness in driving environmental responsibility.
- The outcome of my participation was:
    - Attaining a position within the top 10 of the Cardiff University 100 Big Ideas competition, showcasing the idea's relevance and potential impact. Receiving a £100 prize.
    - Garnering recognition for the innovative approach to environmental accountability and consumer empowerment in business practices.
    - Stimulating discussions and interest among peers and judges on the importance of transparent environmental assessments for businesses, highlighting the urgency of addressing climate change and promoting sustainable practices.