

# Lochlann O Neill

## Software Development

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### SKILLS

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- **Languages:** Java, Python, C, C#, HTML/CSS, Javascript, SQL
- **Technologies:** Spring/SpringBoot, Docker, Kubernetes, MongoDB, Node.js
- **Misc:** Agile, REST, Microservices, UX design, Git, Leetcode

### EDUCATION

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**Munster Technological University - BSc (Honours) Software Development**

**Sep. 2018 – May. 2023**

- Grade: First-Class Honours 1:1 (4.0 GPA equivalent)
- Participated societies: Airsoft, Athletics, Esports, Programming, Skating

**Central Technical Institute - QQI-6 Software Development**

**Sep. 2017 – May. 2018**

- Grade: Distinction (4.0 GPA equivalent)

### WORK EXPERIENCE

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**Boston Scientific - Electronic and Software Co-Op**

**Jan. 2021 – Sep. 2021**

*Summary: C#, Visual Studio, Excel, Primo, SharePoint, Teams, VNC Viewer 4, Watchdog, Windchill*

- Maintained regular communication with local system owners and external developers of outsourced software to gather sensitive system information.
- Cleansed and updated data in Primo database by integrating information from factory systems, ensuring its accuracy and reliability for multiple project management SharePoints.
- Conducted meticulous code reviews of 'in-house' software, diligently adhering to predefined specifications to identify redundant component ID formats for subsequent refactoring.

**Boston Scientific - PCBA Quality Inspection**

**May. 2019 – Sep. 2019**

- Performed comprehensive quality inspection protocols for printed circuit board assembly (PCBA) line.
- Adhered to manufacturing instructions to ensure strict compliance, while identifying and reporting any discovered faults.
- Consistently achieved daily metrics, encompassing output, efficiency, lead time, and quality standards.

### PROJECTS

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**Final Year Project - 3D Video Game Development (83% Year 4)**

*Summary: C#, Unity, Blender, Photoshop, Sony Vegas, Overleaf*

*Github - <https://github.com/lochlannoneill/INTR8016-FinalYearProject-Unity>*

- Developed an immersive 3D video game, utilizing modern technologies such as Unity (C#) and Blender.
- Authored a comprehensive 35,000-word document, outlining the entire development process.
- Delivered an engaging in-person presentation, complemented by an informative poster, a captivating feature video, and a hands-on playable demonstration.

**Frameworks - SpringBoot (93% Year 4)**

*Summary: Java, REST, Spring/SpringBoot, Maven, H2, JPA, JSON, Postman, Lombok, HATEOAS, MockMVC, SLF4J*

*Github - <https://github.com/lochlannoneill/SOFT8020-Frameworks-REST-SpringBoot-JPA>*

- Created a RESTful web service for school enrollment on a H2 embedded database (offices, students, etc.).
- Implemented effective SLF4J logging to enhance system monitoring and debugging capabilities.

- Conducted throughout unit testing on the web service by employing MockMVC, ensuring the functionality and reliability of the service under different scenarios and inputs.
- Incorporated role-based authentication, effectively controlling access to specific resources and limiting responses to only those authorized for certain HTTP requests, ensuring data security and privacy.

### **Microservices - Docker/Kubernetes (77% Year 4)**

*Summary: Python, Docker, Kubernetes, gRPC, Redis, RabbitMQ, Prometheus*

*Github - <https://github.com/lochlannoneill/SOFT8026-DataDrivenMicroservices-Docker-gRPC-Redis-RabbitMQ>*

- Designed and implemented a containerized microservice-oriented video game platform, leveraging Python, Docker, gRPC, and RabbitMQ to facilitate seamless communication and streaming.
- Migrated the system to a K3S environment and devised a robust scaling strategy.
- Performed thorough functional and non-functional testing and implemented a monitoring solution to optimize performance and resource allocation for optimal results.

### **Operating System Engineering - XV6 Qemu (95% Year 4)**

*Summary: C, xv6, Qemu, System calls, Interrupts, FUSE, GlusterFS*

*Github - <https://github.com/lochlannoneill/COMP8051-OSEng-xv6-qemu>*

- Engaged in kernel-level development for the xv6 OS, extending its capabilities through the creation of custom system calls to enhance OS functionality (ps, trace, find, etc.).
- Enhanced the xv6 file system to accommodate larger files, thereby raising file size limits.
- Investigated the application of interrupts in I/O scheduling, FUSE, and GlusterFS.

### **Game Development - Group Project (73% Year 4)**

*Summary: Group Leader, Lua, Defold, Piskel, Kanban, Agile, MDA*

*Github - <https://github.com/lochlannoneill/SOFT8009-GameDevelopment-Group>*

- As the group leader, I emphasized the implementation of the agile methodology by assigning team roles, establishing and updating an effective Kanban board, orchestrating team meetings, and composing comprehensive project documentation.
- Designed and developed all pixel art assets for the game's entities (players, walls, traps, etc.).
- Engineered Lua scripts to govern game mechanics in alignment with the MDA framework.

### **Big Data & Analytics - PySpark & Spark Structured Streaming (100% Year 4)**

*Summary: Python, PySpark, Apache Spark*

*Github - <https://github.com/lochlannoneill/SOFT8033-BigDataAnalytics-PySpark>*

- Formulated SparkSQL queries to compute various statistics and glean insights from the provided dataset.
- Implemented Spark Structured Streaming to conduct real-time data analytics on streamed input data.

### **Portfolio Website - [www.lochlannoneill.com](http://www.lochlannoneill.com) (Personal Development)**

*Summary: HTML/CSS, Javascript, Bootstrap, UX design, Cloudflare*

*Github - <https://github.com/lochlannoneill/website>*

- Developed an online portfolio, incorporating responsive design and interactive features to enhance user experience.

### **LeetCode - lochlannoneill (Personal Development)**

*Summary: Java, Python, Algorithms, Data Structures, Optimization*

*Github - <https://github.com/lochlannoneill/LeetCode>*

- Consistently engaging in LeetCode challenges to bolster my problem-solving abilities and sharpen my algorithmic proficiency, aiming to achieve optimal runtime and memory metrics.

## **REFERENCES**

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References available upon request.