

# Lewis McGrogan

Final-Year MEng Computer Science Student — Queen's University Belfast  
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## Profile

Final-year MEng Computer Science student with a strong academic record, specialising in software engineering, full-stack web development, and applied machine learning. Experienced in delivering client-facing web systems and building reproducible ML pipelines. Seeking graduate roles in software engineering or similar.

## Industry Experience

### Web Development — Client Projects

2025—Present

- Designed, developed, and deployed client websites, publicly available on my portfolio
- Worked directly with clients to gather requirements and iteratively refine functionality
- Implemented a full **online booking system** with internal booking management for a performing arts school
- *Tech stack: Next.js, React, TypeScript, Tailwind CSS, REST APIs, Vercel*

### Final-Year Research Project — Knowledge Distillation for ECG Classification

- Developed an end-to-end ECG classification pipeline using the PTB-XL dataset (21,799 recordings)
- Implemented CNN teacher–student models with response-based knowledge distillation in PyTorch
- Designed controlled experiments evaluating accuracy–efficiency trade-offs
- Achieved preliminary Macro-F1  $\approx 0.63$ ; ongoing optimisation of teacher and student models

## Selected Technical Projects

### Distributed Chat System (Java)

- Implemented a distributed peer-to-peer chat system using Java sockets and concurrency primitives
- Supported real-time messaging and multi-client communication

### Device Monitoring System (Android + Backend)

- Built a full-stack device monitoring system with an Android client and RESTful backend
- Implemented backend data storage and device state reporting (battery level and network status)

### Facial Recognition System (Machine Learning)

- Built a classical facial recognition pipeline using HOG, LBP, and Gabor features with SVM and KNN classifiers
- Achieved up to 96% accuracy using AdaBoost with HOG features

## Technical Skills

**Languages:** Java, Python, TypeScript, MATLAB

**Web:** React, Next.js, HTML, CSS, REST APIs

**Machine Learning:** PyTorch, CNNs, knowledge distillation, experimental evaluation

**Software Engineering:** Object-oriented design, concurrency, distributed systems

**Tools:** Git, GitHub, Docker, SLURM, Vite

## Education

### Queen's University Belfast — MEng Computer Science

Sep 2022 – May 2026

Final-Year Average: 81% | Expected classification: First-Class Honours / 2:1

### Our Lady & St. Patrick's College, Knock

Sep 2015 – Jun 2022

A-Levels: AAB | GCSEs: 10 A Grades, 1 A\*