

## EDUCATION

### Trinity College, Dublin

BAI Computers and Electronics Engineering

Ireland

2018–2022

#### Dissertation: “Surveying Long-Term Cryptographic Keys in Ireland” | [GitHub](#)

- Developed, refactored code for a network data application to scan, mine data from 20,000 Irish mail servers
- Researched encryption key sharing in mail server infrastructure, leveraging Python for data analysis and development on Linux
- Analyzed JSON metadata using Python on Linux, presenting results with custom node-based graphs, showing 52% public key sharing

## WORK EXPERIENCE

### Baker Hughes

Software Engineer

Ireland

Mar'23 – Present

- Worked in a cross-functional team to revitalize legacy oxygen sensor software, focusing on improving human-machine interface (HMI)
- Designed, developed HMI in C, IAR, with over 10+ features like password entry, validation, numeric input, customizable dashboard
- Contributed to system functionality and user interaction by integrating bootloader, linking Data Manager with HMI
- Implemented a CI/CD workflow utilizing Parasoft on GitHub, ensuring MISRA complaint and significantly reducing rework by 30%
- Developed Python script to convert images to C hex arrays, saving 2 hours/feature. Standardized design practices across the SW team

Graduate Software Engineer

Aug'22 – Mar'23

- Developed HMI emulator in C (WIN32) for debugging, accelerated feature dev, delivered as standalone application for client training
- Optimised Agile board by decomposing EPICS, user stories into tasks and coordinating sprints; boosted timely delivery by 25%
- Documented test cases and code architecture, contributed to design reviews and handled changing of requirements in SW

### Ericsson

AI/ML Intern

India

Jun'21 – Aug'21

- Analysed large datasets; applied ML models like Linear Regression, Decision Trees, and AdaBoost for predictive analysis
- Utilised 5 performance metrics including recall, f1score, precision, accuracy and ROC curves to assess the performance
- Applied K-Means algorithm on the historical IT dataset; hyper-tuned the model using elbow curves, and silhouette method(s) to identify optimal clusters

### Lepton Software

Market Research Intern

India

Jun'19 – Aug'19

- Leveraged advanced Excel functions like vlookups, pivot tables, and sorts to perform in-depth analysis of 5G market data
- Presented to stakeholders a strategy on how Lepton can differentiate itself from competitors by leveraging services they offer

## PROJECTS AND ACTIVITIES

### BCG Gamma Experience

Data Science

Virtual

Jun'23

- Enhanced understanding of problem-solving processes and working with challenging data analysis tasks
- Developed practical experience in business problem framing, exploratory data analysis, feature engineering, predictive modeling, and turning insights into business decisions

### Formula Trinity AI

State Estimation and Path Planning

Ireland

Nov'20 – May'22

- Improved sensor data accuracy in autonomous racing car systems by implementing Particle and Kalman filters for noise reduction
- Optimized racing line selection using A\* and Dijkstra's algorithms for maximum performance and speed in autonomous racing cars
- Mentored recruits in Python, ROS, and state estimation algorithms, enabling their seamless integration into the team

### Email Client

- Designed an email client for macOS (Unix) architectures; incorporated features like login, search, compose and schedule send
- Implemented the backend and API calls using Python and utilized Kivy for UI design

## SKILLS

**Programming:** Python, C, C++, JavaScript, SQL, XML, Git, Matlab, Verilog, R, Static Analysis, TeX

**Technologies:** IAR, Parasoft, PostgreSQL, Visual Studio, Linux, Wireshark, SPSS, Protoge, MS Office, AWS EC2