

Cathal Breathnach

FINAL YEAR ELECTRONIC & COMPUTER ENGINEERING STUDENT

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A high achieving and innovative final year undergraduate Electronic and Computer Engineering student seeking exciting graduate opportunities. Completing course work in May 2018. Well organised with a strong attention to detail and the ability to solve complex problems as part of a team. Has the ability to learn quickly and efficiently to a high performance level. Interested in applying experience gained to solving relevant real-world problems by implementing innovative engineering approaches. A particular interest in designing practical solutions using artificial intelligence and next-generation technologies.

Education

National University of Ireland, Galway

Galway, Ireland

BACHELOR OF ENGINEERING (ELECTRONIC & COMPUTER)

2014 - PRESENT

- Studied a wide variety of hardware and software modules.
- Overall Third Year Result: 86.2%, First Class Honours
- Overall Second Year Result: 88.58%, First Class Honours
- Overall First Year Result: 89.90%, First Class Honours

National University of Ireland, Galway

Galway, Ireland

BACHELOR OF SCIENCE (FIRST YEAR ONLY)

2013 - 2014

- Overall First Year Result: 95.75%, First Class Honours.
- Subjects Studied: Mathematics, Physics, Chemistry, Applied Mathematics.

St. Joseph's College "The Bish"

Galway, Ireland

LEAVING CERTIFICATE

2008 - 2013

- Overall result: 625 points (Maximum points).
- Subjects Studied: English, Irish, Mathematics, French, Physics, Chemistry, Applied Mathematics.

Projects

Advanced Techniques for Particle Swarm Optimisation

FINAL YEAR PROJECT

- Analysed and researched variations of an evolutionary algorithm to implement new variants.
- Developed a Java simulator for comprehensive testing and the collection of large amounts of data.
- Analysed results to determine statistical improvements in performance.

Logistic Regression Algorithm Implementation

MACHINE LEARNING ASSIGNMENT PROJECT

- Developed the logistic regression algorithm from scratch using Java, implemented for the user with a GUI interface.

Bluetooth-Enabled Electro-mechanical Xylophone using Arduino

SECOND YEAR MICROPROCESSORS SYSTEMS ENGINEERING PROJECT

- The creation of an electronic xylophone wirelessly controlled by a user worn glove. Featured record and playback functionality.

Experience

Aerogen

Galway, Ireland

ELECTRONIC & COMPUTER ENGINEERING INTERN

January 2017 - August 2017

- Student role in the electronic R&D department of the industry leader for high performance aerosol drug delivery.
- Responsible for product testing, analysing and collecting results for reports.
- Programmed micro-controllers and monitored power consumption over various tests.
- Created a C# GUI to interact with a micro-controller device from a tablet. Investigated different .NET libraries available for use.

National University of Ireland, Galway

Galway, Ireland

STUDENT AMBASSADOR

2014 - PRESENT

- Lead ambassador role, helping with organisation of other ambassadors and of events.
- Representing and promoting the university, interacting with prospective students and academic guests.

NUIG Mountaineering Club

Galway, Ireland

CLUB CAPTAIN, MAAMTURKS CHALLENGE CHAIRPERSON, COMMITTEE ADVISOR

2014 - PRESENT

- Captain of the club for 2014-2015. Overseeing the entire running of the largest university club.
- Involved with the organisation of the Maamturks Challenge since 2013, one of Ireland's largest hillwalking events.
- Advisor to the club committee for 2017-2018.

1st Galway St. Joseph's Scout Group

Galway, Ireland

SCOUT LEADER, ROVER SCOUT

2014 - PRESENT

- Assisting in planning and implementing an exciting and safe programme for children aged 12-15.
- A member of the national team for the Irish Rover Network for third level groups from 2015 - 2017.
- Chosen as one of ten Rover Scouts to represent Ireland on a cultural exchange to Japan in 2016.
- Set up and administer the group website and email system.

NUIG Rover Society

Galway, Ireland

AUDITOR, TREASURER, FOUNDING MEMBER, PROJECT MANAGER

2014 - 2017

- Treasurer of the university Scout society for 2014 - 2015. Auditor for 2015-2016, overseeing all aspects of the society.
- Team Lead for the organisation a national inter-varsity event in 2017, named best national Rover event for that year.

National University of Ireland, Galway

Galway, Ireland

CÉIM LEADER

2015 - 2016

- Leader for a peer-assisted learning (PAL or PASS) scheme run for first year engineering students.

River Deep Mountain High

Galway, Ireland

SALES ASSISTANT

Summer 2015, 2016

Rusheen Bay Windsurfing

Galway, Ireland

WATER SPORTS INSTRUCTOR

Summer 2012, 2013, 2014

Achievements

- 2018 **University Scholar**, NUI Galway. Awarded for high results. Also awarded in 2017, 2016, 2015.
- 2015 **Explorer Belt Award**, Scouting Ireland. One of the highest awards attainable for Rover Scouts.
- 2015 **Club Captain of the Year**, NUI Galway. Chosen amongst all captains from over 50 clubs.
- 2013 **Entrance Scholar**, NUI Galway. Awarded based upon Leaving Certificate results.
- 2013 **Brother Angelus Award - Student of the Year for Academic Endeavor**, St. Joseph's College.
- 2012 **Chief Scout Award**, Scouting Ireland. One of the highest awards attainable for youth members.

Skills

Java: Most familiar language. Have studied many aspects, including object-oriented traits and GUIs. Experience with Android.

Python: Have a working knowledge. Have used the Scikit-learn libraries for machine learning on various data sets.

Embedded Systems: Have studied systems and processor architecture. Written C code for Microchip and Arduino MCUs.

Chip Design: Have studied chip processes and have knowledge of VHDL and simulation environments for analysing systems.

Electronics: Good knowledge of analogue and digital electronics, electromagnetics, signals and communication systems.

Web Technology: Have knowledge of HTML & CSS, SQL and other CMS systems. Also have experience with JSON databases.

Applications: Experience using MATLAB, LabView, LabWindows, Microsoft Office applications and LaTeX document editors.

Teamwork: Have worked on collaborative projects in a professional context, through university and through other past-times.

Communication: Excellent oral and written communication skills.

Problem Solving: Have a proven ability to take a structured and logical approach to problems.

Leadership: A determined leader. Able to manage people and their abilities effectively.

Languages: Have a conversational standard of French and Irish.

Hobbies & Interests

Technology: Self taught programming for different applications. Websites and app development.

Mountaineering: A regular hiker and climber. Have travelled extensively in Ireland and abroad.

Running: Have been running for a number of years, have taken part in several events.

Scouting: Have been involved in the Scout movement since the age of 11. An active member.

Music: Have played the piano for over 8 years to Grade 7 level.