

Barry Ryan

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EDUCATION

The University of Edinburgh:

PhD Candidate in Biomedical Artificial Intelligence *Sept. 2022 to present*

Research Focus: Integrating genomic and clinical modalities using a network taxonomy and employing graph neural networks for classifying heterogeneous disease outcomes.

MRes in Biomedical Artificial Intelligence *Sept. 2021 to Aug. 2022*

Grade: Distinction

Thesis: Gene expression in peripheral whole blood RNA sequencing reveals genetic markers of Parkinson's Disease.

Trinity College Dublin:

MSc in Computer Science - Data Science *Sept. 2020 to Aug. 2021*

Grade: Distinction

Thesis: Identifying protein biomarkers which predict ANCA-Associated Vasculitis patients at risk of relapse.

University College Cork:

BEEL in Electrical and Electronic Engineering *Sept. 2015 to May 2019*

Grade: 1st Class Honours - 87% Average

EXPERIENCE

Qualcomm: *Cork, IRL*

Digital Design Engineer *Sep. 2019 to Jul. 2020*

- Implement trace aggregation and error detection in Verilog with lint and clock domain crossing checks.
- Delivery of ARM Microcontroller Bus Architecture APB components to semiconductor chip design projects.

Massachusetts Institute of Technology (MIT): *MA, USA*

Research Intern *May. 2018 to Aug. 2018*



- Joint research project with the MIT Energy Initiative group modelling power transitions in California post sustainable energy resource implementation.

The University of Edinburgh: *Edinburgh, UK*

Teaching Assistant *Sep. 2022 to present*

- Computer lab demonstration, coursework marking and generation of course materials for Bioinformatics 1.
- Tutor, demonstrator and marker for Probabilistic Modelling and Reasoning.

PUBLICATIONS

- **Integration of datasets for individual prediction of DNA methylation-based biomarkers** *Dec. 2023*
Genome Biology ISSN:24(1) p278 DOI:[10.1186/s13059-023-03114-5](https://doi.org/10.1186/s13059-023-03114-5) 
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- **Multi-Omic Graph Diagnosis (MOGDx): A data integration tool to perform classification tasks for heterogeneous diseases** *Jul. 2023*
medRxiv preprint DOI:[10.1101/2023.07.09.23292410](https://doi.org/10.1101/2023.07.09.23292410) 
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- **An Integrative Network Approach for Longitudinal Stratification in Parkinson's Disease**

Jan. 2024

medRxiv preprint DOI:[10.1101/2024.01.25.24301595](https://doi.org/10.1101/2024.01.25.24301595) 

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ACHIEVEMENTS AND AWARDS

- **Best Presentation (2023):** Selected for best presentation at the Edinburgh Next Generation of Genomics Symposium.
- **International Conference Presentation (2023):** Presented a poster at the Intelligent Systems for Molecular Biology in Lyon.
- **Quercus Scholarships (2015 & 2018):** Awarded entrance scholarship in 2015 and academic scholarship in 2018 from University College Cork
- **European Excellence Scholar (2020):** Awarded entrance scholarship to Trinity College Dublin
- **CEIA Graduate Scholarship (2019):** Awarded bursary from the CEIA Technology Network in Cork based on graduation results from University College Cork

SKILLS

- **Coding:** Python, R, C++
- **Software:** Visual Studio, Linux, Docker, Slurm Workload Manager, Kubernetes
- **Languages:** English (native), Irish (CEFR : C1), French (CEFR : A3)

INTERESTS & HOBBIES

- **Gaelic Football:** Gaelic Football is an Irish sport which I have played since I was 5 years old. I am currently a member of Dunedin Connolys with a personal highlight being selected as captain for the Scotland national team in the Great Britain Championship in 2023
- **Skiing:** I am a keen skier and have visited Swiss, French and Andoran ski resorts.
- **Reading & Music:** In my spare time I enjoy reading and attending concerts. My favourite book is "The Magic Strings of Frankie Presto" by Mitch Albom. My favourite artists are Kings of Leon, Hozier and Bruce Springsteen.