

# Barry Ryan

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in <https://www.linkedin.com/in/barry-ryan/>    🐙 <https://github.com/Barry8197/>

## EDUCATION

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### 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: 1<sup>st</sup> Class Honours - 87% Average

## EXPERIENCE

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### Optima Partners:

*Edinburgh, UK*

*Data Scientist - part time*

*Aug. 2024 to Dec 2024*

- Integrating causal genomic relationships using networks
- Develop RShiny applications for demonstration of bioinformatic pipelines to clients

### 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.

## PUBLICATIONS

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- **Multi-Omic Graph Diagnosis (MOGDx): A data integration tool to perform classification tasks for heterogeneous diseases**

*Aug. 2024*

Bioinformatics, 2024;, btae523, <https://doi.org/10.1093/bioinformatics/btae523> [🔗](#)

Barry Ryan, Riccardo Marioni & T. Ian Simpson

- **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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- **Combining Clinical Embeddings with Multi-Omic Features for Improved Patient Classification and Interpretability in Parkinson's Disease**

*Jan. 2025*

medRxiv preprint DOI:[10.1101/2025.01.17.25320664](https://doi.org/10.1101/2025.01.17.25320664) [↗](#)

Barry Ryan, Chaeun Lee, Riccardo Marioni, Pasquale Minervini & T. Ian Simpson

- **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

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- **Best Presentation (2023):** Selected for best presentation at the Edinburgh Next Generation of Genomics Symposium.
- **International Conference Presentations (2023 & 2024):** Delivered a workshop on Modelling Multi-Modal Biomedical Data Using Networks at the Intelligent Systems for Molecular Biology Conference in Montreal. Also presented posters at the same in Lyon '23 and Montreal '24.
- **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

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- **Coding:** Python, R, C++
- **Software:** Visual Studio, Linux, Docker, Slurm Workload Manager, Kubernetes
- **Languages:** English (native), Irish (CEFR : C1), German (CEFR : B1), French (CEFR : A2)

## INTERESTS & HOBBIES

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- **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.