

# Barry Ryan

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

## EDUCATION

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### University College Cork:

*BEEL in Electrical and Electronic Engineering*  
Grade: 1<sup>st</sup> Class Honours - 87% Average

*Sept. 2015 to May 2019*

### Trinity College Dublin:

*MSc in Computer Science - Data Science*  
Grade: Distinction

*Sept. 2020 to Aug. 2021*

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

### The University of Edinburgh:

*MRes in Biomedical Artificial Intelligence*  
Grade: Distinction

*Sept. 2021 to Aug. 2022*

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

*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.

## EXPERIENCE

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### 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

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- **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) [🔗](#)  
Barry Ryan et al.

- **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) [🔗](#)  
Barry Ryan, Riccardo Marioni & 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) 

Barry Ryan, Riccardo Marioni & T. Ian Simpson

## ACHIEVEMENTS AND AWARDS

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- **International Conference Presentation (2023):** Presented a poster at the Intelligent Systems for Molecular Biology in Lyon.
- **Best Presentation (2023):** Selected for best presentation at the Edinburgh Next Generation of Genomics Symposium.
- **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), French (CEFR : A3)