

Seán Gorman

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GitHub- <https://github.com/SeanGormann> | Kaggle - <https://www.kaggle.com/seangormann>

Relevant Projects

Please see the GitHub link at the top of the page to view these (and all other) projects.

AuRA – An LLM-powered Autonomous Research Agent (3rd place in Health Universe Hackathon).

RNAformer – Designing Deep Learning Algorithms to predict the reactivity of RNA molecules.

AutoMate – Prospective website developed for an AI Automation Agency.

Experience

Machine Learning Researcher

University of Lisbon | 2022 - present

- Acting ML Engineer applying ML/DL techniques to drug discovery by predicting pharmacological metrics.
- Automating extraction, transformation, and visualization of large datasets from ChEMBL, PDB, etc.
- Researching, implementing and adapting code from academic papers with state of the art performance.
- Designing and testing Deep Learning architectures (Transformer, GNN's, etc.), modularization of code, training with cloud computing platforms (GCP, AWS, Vast AI), result analysis and model optimization.

Junior Research Specialist

University of California, SF – Gould Lab | 2019 - 2022

- Worked in a multidisciplinary lab studying the mechanisms underpinning the disease 'Gould Syndrome'.
- Spearheaded the technical work of two projects relating to kidney dysfunction and creating/ analyzing KO cell lines.
- Trained new staff research associates and junior specialists techniques such as genotyping and sequence analysis.
- Have had exposure to varied techniques such as genotyping, DNA sequence analysis, western blots, immunolabelling, cell culture, MEF harvesting, CRISPR-Cas9 transfection and more.

Research Assistant

UCD | September 2018 – May 2019

- Worked with animal models; handling, dissection, tissue extraction, tissue preparation.
- Carried out electrophysiological experiments on rodent hippocampal tissue, recorded, and analyzed data.
- Investigated the therapeutic benefit of anti-inflammatory cannabinoids for use in treatment resistant epilepsy.

Education

MSc Bioinformatics & Computational Biology

University of Lisbon | 2022 - 2024

- Honors Thesis: "Deep Learning for Discovery of Drug Binding Activities to Orphan Targets"
- Relevant Modules: Advanced Machine Learning, Data Mining, Advanced Studies in Bioinformatics and Computational Biology, Quantitative Methods in Systems Biology.

BSc Neuroscience (Hons)

University College Dublin | 2015 – 2019

- Honors Thesis: "Modulation of Hippocampal Synaptic Transmission by Cannabidiol"
- Relevant Modules: Biomolecular lab skills, Molecular Genetics and Biotechnology, Advanced Neuropharmacology, Synaptic Signaling, Data Modelling for Science

GPA: 3.5

Skills

- | | |
|------------------------------|---------------------------------|
| • Python/SQL/JavaScript | • Artificial Intelligence |
| • Machine Learning | • Life Science Domain Expertise |
| • Algorithm Design | • CRISPR Gene Engineering |
| • PyTorch/TensorFlow/SKLearn | • Cell Culture |

Academic Citations

Massoudi, D., Gorman, S., Kuo, Y. M., Iwawaki, T., Oakes, S. A., Papa, F. R., & Gould, D. B. (2023). Deletion of the Unfolded Protein Response Transducer IRE1 α Is Detrimental to Aging Photoreceptors and to ER Stress-Mediated Retinal Degeneration. *Investigative Ophthalmology & Visual Science*, 64(4), 30-30.

Branyan, K., Labelle-Dumais, C., Wang, X., Hayashi, G., Lee, B., Peltz, Z., Gorman, S., & Gould, D. B. (2023). Elevated TGF β signaling contributes to cerebral small vessel disease in mouse models of Gould syndrome. *Matrix Biology*, 115, 48-70.

Massoudi, D., Gorman, S., Kuo, Y. M., Olivier, A., Kim, J., Wiqas, A., ... & Gould, D. B. (2021). The UPR transducer—IRE1 α —is required for photoreceptor health and protection against retinal degeneration. *Investigative Ophthalmology & Visual Science*, 62(8), 3073-3073.

References

Prof. Andre Falcão – aofalcao@fc.ul.pt (PI at Ulisboa)

Prof. Douglas Gould – douglas.gould@ucsf.edu (PI at Gould Lab)

Adj Prof. Yoshihiro Ishikawa – yoshihiro.ishikawa@ucsf.edu (Supervisor at Gould Lab)

Dr. Dawiyat Massoudi – dawiyat.massoudi@ucsf.edu (Supervisor at Gould Lab)

Dr. Caroline Herron – caroline.herron@ucd.ie (PI at UCD)