Upamanyu Ghose

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Personal statement

Enthusiastic and results-driven student with a formal background in computer science, specializing in machine learning applications for multidisciplinary challenges. My passion lies in leveraging the power of artificial intelligence to address complex issues in the field of healthcare, biology, and finance. Currently undertaking a PhD, my research focuses on developing advanced machine learning methods to analyse genomic data for Alzheimer's disease. Eager to bring a unique blend of technical expertise and domain knowledge to collaborative projects at the intersection of data science and diverse fields.

Key Skills

- **Programming languages:** Python, R, Bash, Java (Beginner)
- **Machine Learning Frameworks:** PyTorch, Huggingface, Scikit-learn
- **Cloud Frameworks:** AWS

Employment History

Research Assistant - Department of Psychiatry, University of Oxford

(September 2020 – September 2023)

- Member of the Translational Neuroscience and Dementia Research Group (TNDRG) and Centre for Artificial Intelligence in Precision Medicines (CAIPM).
- Led the development of a novel method for genome wide association using neural networks (GWANN) and tested it on single nucleotide polymorphism (SNP) data from the UK Biobank.
- Identified novel genes associated with Alzheimer's disease and type II diabetes (T2D). The T2D genes are currently being used for target prioritisation by the drug discovery team of the CAIPM.
- Co-developed projects on the identification of short tandem repeats (STRs) using neural networks, and genome wide association of STRs with brain region volumes.

Research Intern - Nanyang Technological University, Singapore

(May 2018 – June 2019)

- Intern at the Speech and Language Laboratory, School of Computer Science.
- Led the data collection of eye tracking and EEG sensors, and jointly designed the study for a project on detecting human emotion.
- Developed and published PyTrack, an open-source Python toolkit to analyse eye-tracker data.

Education

Doctor of Philosophy in Psychiatry, University of Oxford

(September 2023 – Present)

- **Funding Award:** Alzheimer's Research UK Studentship 2023
- **Research Topic:** Development of novel artificial neural network methods to analyse genomic data and understand the genetic aetiology of Alzheimer's Disease.

Master of Science in Computer Science, University of Oxford
(September 2019 – September 2020)

- **Funding Award:** Oxford Weidenfeld-Hoffmann Scholarship 2019
- **Award classification**: Distinction
- **Modules**: Computational Game Theory, Probabilistic Model Checking, Computer Security, Functional Programming, Computational Biology

Bachelor of Technology Computer Science and Engineering, Manipal Institute of Technology
(June 2015 – June 2019)

- **CGPA**: 9.86/10.0
- **Modules**: Engineering Mathematics, Software Engineering, Database Management, Data Structures and Algorithms, Artificial Intelligence, Machine Learning

Hobbies & Interests

Outside the realm of data science and research, I find fulfilment in a diverse range of interests. A theatre enthusiast, I have completed Trinity Speech and Drama Grade 3. On the sporting front, I engage in the dynamic pursuits of climbing, rowing, badminton, and football. Music is another passion, where I express my creativity through playing the drums and guitar and singing in the Green Templeton College Choir.