Brian Maloney

Keelbaun, Ballymahon, Co.Longford, Ireland. brianjjmaloney@gmail.com 087 445 1240

Education

University College Dublin. *Sept 2024 – Present*
MSc in Theoretical Physics and Applied Mathematics. 4.03 GPA

- I am currently studying for a masters in UCD. My focus is on Theoretical Physics.
- I am focusing on both strengthening my foundations and delving deeper into topics I find interesting during my masters. Modules that cover Machine Learning, Stochastic Calculus and Condensed and Soft Matter Physics. These topics all revolve around the modelling and study of complex systems.

National University of Ireland, Maynooth *Sept 2021 – May 2024*
BSc in Theoretical Physics and Mathematics. First class honours.

- I graduated top of my year in an accelerated course in Theoretical Physics and Pure Maths with a First class honours.
- I was awarded the O'Raifeartaigh prize for best result in third year Theoretical Physics and Hamilton prize for best result in final year Theoretical Physics.
- This course provided me an incredibly strong foundation for further research and study in any field of Physics or Maths.

Work Experience

Physics Tutor *Dublin, Ireland*
University College Dublin *Sept 2024 – Present*

- I am currently providing support to Engineers taking Intro to Physics.
- I work through and explain problems requested by the class or questions I prepared that focus on the topics covered in the lectures for the week.

Science Intern *Dublin, Ireland*
Explorium, National Sport and Science Centre *June 2024 – Aug 2024*

- Interacted with visitors and convey the main scientific topics behind the exhibits clearly and succinctly.
- Worked with a large team of interns from other scientific backgrounds to create new and interesting exhibits.
- Created exhibits on DNA, bioluminescence and scale in our solar system.

Math Tutor *Kildare, Ireland*
National University of Ireland, Maynooth *Oct 2023 – May 2024*

- I worked as a Pure Maths tutor in my final year of college.
- I worked closely with lecturers giving tutorials, correcting assignments and providing feedback.

Wait staff *Nantucket MA, USA*
Sankaty Head Golf Course *July 2023 – Sept 2023*

- During my J1 exchange visit to America I worked as a waiter in Sankaty Head Golf Course.
- I provided our guests with excellent service, managed high pressure situations professionally and worked closely with both front and back of house to give our guests truly memorable experiences.
- I improved my skills as a team leader and working in both large and small teams with people who come from drastically different and diverse backgrounds to my own.
- I worked weddings, large gatherings, weekly buffets and dinner parties of upwards of 500 people.

Team Member *Longford, Ireland*
Huck's Bar and Grill, Center Parcs Longford *June 2021 – Feb. 2023*

- I worked as a team member at Huck's Bar and Grill to fund my undergraduate.
- I learned the basics of the service industry and developed my team working skills that were further built upon during my time in America.

Research Experience

Atomistic Simulations of nano and micro plastics
Supervisor: *Dr Vladimir Lobaskin*

- **Overview:** My masters programme will finish with an 8 month research project that began in January. I am currently working with Dr Vladimir Lobaskin on a project that focuses on multiscale modelling of plastic nano particles.
- **Research Methods:** Literary review and molecular simulations using GROMACS.

Collective motion of Humans at Heavy Metal Concerts
Supervisor: *Dr Jon-Ivar Skullerud*

- **Overview:** I finished my undergraduate with a computational project on the motion of humans in mosh pits. The project used many computational techniques present in soft and condensed matter physics and was coded in Python. The project was a recreation of a paper by the same name. Collective Motion of Humans in Mosh and Circle Pits at Heavy Metal Concerts
- **Research Methods:** Literature review and computational simulations through python.

Skills

Python

- I am skilled in Python having completed projects and assignments with the language covering modelling of complex systems, data visualization and machine learning.

Communication

- I have worked with many teams in both my time in the service industry as well as my time at college. I have developed excellent communication skills that help me and my teams work to the best of our ability. I also kept communication open with both the lectures I tutor for and the students to guarantee the students fully grasp the content being delivered.

Time Management

- I've learned excellent time management skills during my college life. Balancing college assignments, weekend job and delivering the content of my tutorials in the allotted time. I am also very efficient in high pressure situations, being able to quickly identify the most important problems and tackle them with an effective plan with my team.

Problem Solving

- I am a great problem solver. My undergad is an accelerated 3 year Physics and Pure Maths degree which allowed me to develop both my team work and problem solving skills as my class mates and I tackled a demanding course and difficult assignments. I am also able to quickly learn new skills and topics to keep up with the demands of both my course and ever changing systems and menus in the restaurants I worked in.

Self motivated

- I am highly self-driven, as demonstrated by successfully completing an accelerated undergraduate degree and master's program. This experience has honed my ability to learn complex concepts quickly and effectively. I thrive in fast-paced environments and have a proven track record of acquiring new skills rapidly and adapting to new challenges with ease.