Brandon Kelly

MPhys

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Hard Skills

- Mathematical Ability
- Research Skills
- Coding Skills
  - Python, Fortran, Java and SQL
- Familiarity with GitHub
- Data analysis and management
- Big Data management

Soft Skills

- Public Speaking
- Critical Thinking
- Scientific Writing
- Problem Solving
- Adaptability and Flexibility
- Creativity and Innovation
- Time Management
- Attention to Detail

Hobbies and Interests

I have a deep interest in video games and have spent some time not only playing them but looking into the processes behind how they work to the point that I have experimented with the fundamentals of game design using Unity. None of these projects have been released but I have put together a few simple 2D side scrollers as well as playing around with Javascript code for board games such as chess.

Additionally, I enjoy playing and writing music. I have played in several bands over the years, where I have honed my skills in collaboration, creativity, and communication. Through these experiences, I have learned the importance of effective teamwork, as well as the value of persistence and dedication in achieving a shared goal.

I believe that these skills and qualities have not only made me a better musician but also a more well-rounded and valuable candidate for the workplace.

About Me

I am a highly motivated and analytical individual with a passion for exploring the mysteries of the universe. Originally from Liverpool, UK, I earned a first-class master's degree in Astrophysics from Aberystwyth, where I developed a strong foundation in quantitative analysis and problem-solving. Following this, I spent 5 years pursuing a PhD in Astrophysics, which provided me with extensive training and experience in big data management, artificial intelligence, and machine learning. I also gained hands-on experience in data processing and analysis through a six-month industry placement. While I was not able to complete my PhD due to delays caused by Covid, the experience and skills I gained have equipped me with a strong foundation in research, data analysis, and coding. As a result, I am eager to pursue a career in research or coding, where I can apply my skills and passion for problem-solving to help organizations achieve their goals.

Education

2017 – 2022	**Liv.Dat Centre for Doctoral Training**	Liverpool, LJMU, ARI
2017	**Exchange Semester**	Svalbard, UNIS
2013 – 2017	**Masters Degree**	Aberystwyth, IMPACS

Research Experience

Postgraduate Research

2017 – 2022 **Postgraduate Researcher** Liverpool, LJMU, ARI

I worked on Intra-cluster Light, a low surface brightness feature of galaxy clusters. My project was centered on writing bespoke code to efficiently iterate over a large sample of optical images to automatically detect, identify and measure the intra-cluster light in each image. I was part of the Liv.Dat Center for Doctoral Training cohort which meant there was a substantial amount of additional training in Machine Learning, Artificial Intelligence, Big Data and project management. The act of undertaking a PhD also gave me a lot of experience presenting to global experts at international conferences as well as gaining and applying a wide variety of research and coding-based skills.

2018 **Industry Placement** Radius PLC

While undertaking an industry placement I used SQL to analyse data stored on a large, active online company database and identify patterns and features within the collected data. The placement gave me valuable insight into the differences between the requirements of industry versus academic data analysis.

Undergraduate Research

2017 **Exchange Semester** Svalbard, UNIS

I spent 5 months on the Arctic archipelago of Svalbard where I studied the processes behind the Aurora Borealis. I conducted field observations and data analysis to investigate the dynamics and characteristics of this spectacular natural phenomenon. This provided valuable hands on experience with real world data analysis as well as resiliency and adaptability in extreme climates.

2016 – 2017 **Masters Thesis** Aberystwyth, IMPACS

In my Masters thesis, I re-derived the theoretical framework that predicted the existence of black holes from first principles. This gave me excellent perspective on how theoretical frameworks and ideas drive practical discoveries.

2015 – 2016 **Bachelors Thesis** Aberystwyth, IMPACS

For my Bachelors thesis, my project partner and I worked collaboratively on modifying the theoretical model for boson sampling, a simplified form of quantum computing, to take into account realistic errors and examine how these errors affect the system. This project honed my teamwork and communication skills as well as giving me the opportunity to explore a topic outside of my normal area of study.