Pia Mukherjee

Phone: (+44) 7969401967, E-mail: pia@cantab.net

LinkedIn: https://www.linkedin.com/in/pia-mukherjee-136bb3173/ | GitHub: https://github.com/piamukherjee

Profile

Driven, motivated, and experienced scientist with a background in Astrophysics research. Strong track record of computational skills, statistical analysis, hypothesis testing, data visualization, modelling and forecasting, Bayesian inference and model selection, the use of Markov Chain Monte Carlo and other sampling techniques. Knowledge of machine learning and deep learning models, NLP, python programming, SQL and business intelligence packages such as PowerBI, Tableau and Solidatas. I am a keen and adaptable worker looking for data science/analytics or related positions that will utilise this skillset.

Training and Education

TechTalent Academy, Data Science **2021**

An intensive 12-week course, focused on the fundamentals of data science delivered through a combination of interactive group learning and home learning tasks.

BCS Foundation Award – Understanding Data in Your Organisation **2021**

Machine Learning by Andrew Ng on Coursera & Data Science on Data Camp **2020**

PhD, Cavendish Laboratory, University of Cambridge **1997-2000**

Topic: Improved Analysis Methods for Cosmic Microwave Background Data. Advisor: Professor Anthony Lasenby

Developed a new method for detecting irregularities in the Cosmic Microwave Background (CMB, relic radiation from the very early universe) which could point towards alternate early universe scenarios. Developed and used different methods to remove foreground contamination from the CMB, which pointed to a new contaminant.

BSc (Hons) and MSc Physics, University of Delhi. **1992-1997**

Work experience

Consultancy **2013-present**

- While on a career break, I was involved in interim consultancy projects for Alpes.ai (an AI start-up in India, projects included work on implementing an original, fast, patented learning algorithm) and the editing of physics research papers for ASK Scientific in Cambridge

Research Scientist, Department of Physics and Astronomy, University of Sussex **2004-2012**

- Extensive analysis of cosmological datasets, development of novel algorithms to perform robust statistical inference, published research papers and presented results at conferences
- Mentored research students, taught courses, refereed papers for journals
- Worked independently and as part of the science working group of large collaborative teams such as the Dark Energy Survey and the Cosmic Origins Explorer
- Co-published a book – "Bayesian methods in Cosmology", Cambridge University Press
- Participated in interdisciplinary inter-University collaborations to enable the flow of ideas

Research Associate, University of Oklahoma **2000-2004**

- Detailed analysis of cosmological data, including the use of non-parametric methods of reconstruction, putting together the latest independent datasets
- Verbal and written communication of results, published high impact well cited papers in peer-reviewed journals, taught graduate and undergraduate courses, refereed papers for scientific journals

Awards and achievements

- L'Oréal-UNESCO 'For Women in Science' UK & Ireland award 2010
- Passed the Sussex Associate Tutors Program accredited by the Staff and Educational Development Association (SEDA) and the Higher Education Academy (HEA).
- Cambridge Commonwealth Trust Scholarship to pursue a Ph.D. in Physics.
- Overseas Research Studentship Award given by the Council of Vice Chancellors and Principals of the Universities of the United Kingdom.
- Fellow of the Cambridge Commonwealth society.
- National Scholarship for aptitude in Physics and Math, University of Delhi

Publications

A few research papers with over 100 citations are listed here. The links to all papers can be found here.

Robust dark energy constraints from supernovae, galaxy clustering, and three-year WMAP observations

Supernova Simulations and Strategies for the Dark Energy Survey

COrE (Cosmic Origins Explorer) A White Paper

A nested sampling algorithm for cosmological model selection

Wavelets and WMAP non-Gaussianity

Model-independent reconstruction of the primordial power spectrum from WMAP data

Model - independent constraints on dark energy density from flux - averaging analysis of type Ia supernova data

Interests and Hobbies

Maths, coding, machine learning, travelling, hiking, painting, trying new things and a bit of fitness.

References

Available upon request