

SOUMYA BANERJEE

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EDUCATION

PhD in Computer Science, 2013, University of New Mexico, USA

Bachelor of Engineering (Computer Science) with Distinction, 2003, Nagpur University, India

RECENT EMPLOYMENT

Senior Research Fellow and Affiliated Lecturer, University of Cambridge, UK, 2019 till date

Postdoctoral Researcher, University of Oxford, UK, 2016 till 2018

Researcher, Commonwealth Scientific and Industrial Research Organisation, Australia, 2015 to 2016

Post-doctoral research fellow, Harvard University, Harvard Medical School and Broad Institute of Harvard and MIT, USA, 2014 to 2015

Post-doctoral research fellow, Max Planck Institute for Molecular Physiology, Germany, 2013 to 2014

Research Intern, Los Alamos National Laboratories, Theoretical Biology and Biophysics Group, USA, 2009 to 2012

Research Assistant, University of New Mexico, Department of Computer Science, USA, 2007 to 2013

Senior Software Engineer and Technical Lead, Cognizant Technology Solutions Ltd., India, 2004 to 2007

Software Engineer, Automation Engineers, India, 2003 to 2004

KEY PUBLICATIONS

1) Patient and public involvement to build trust in artificial intelligence: a framework, tools and case studies, S.Banerjee, P. Alsop, L. Jones, R. Cardinal, *Patterns*, 3(6):100506, 2022

(*Cell Press publishing group*)

2) A class-contrastive human-interpretable machine learning approach to predict mortality in severe mental illness, S. Banerjee, P. Lio, P. Jones, R. Cardinal, *Nature Partner Journal Schizophrenia*, 7, 60, 2021

(*Nature publishing group, Impact Factor = 6.3*)

3) Deconvolution of monocyte responses in inflammatory bowel disease reveals an IL-1 cytokine network that regulates IL-23 in genetic and acquired IL-10 resistance, D. Aschenbrenner, M. Quaranta, S. Banerjee, et al., *Gut*, 2020

(*British Medical Journal publishing group, Impact Factor = 19.8*)

4) Hydroxychloroquine: balancing the needs of LMICs during the COVID-19 pandemic, S. Banerjee, *Lancet Rheumatology*, 2(7):385-386, 2020

(*Lancet publishing group*)

5) Influence of correlated antigen presentation on T cell negative selection in the thymus, S. Banerjee, S.J. Chapman, *Journal of the Royal Society Interface*, 15(148), 20180311, 2018

(*Royal Society publishing group, Impact Factor = 4.3*)

6) Building Trustworthy AI: The Role of Patient and Public Involvement in Healthcare AI Development, S. Banerjee, *Association for the Advancement of Artificial Intelligence (AAAI) Fall Symposium Series, Machine Intelligence for Equitable Global Health*, 2024

GRANTS

- 1) Grant from OpenAI Researcher Access Program for API credits (April 2024): 3000 dollars
- 2) Co-investigator on two pilot grants from the AI@CAM initiative at the University of Cambridge (February 2024): 150,000 pounds

TEACHING EXPERIENCE

I teach machine learning at the University of Cambridge Department of Computer Science and Bioinformatics Training Centre. I have also taught students from Uganda through the University of Cambridge Africa programme. I taught data science at the University of Oxford Complex Networks Summer School.

I have taught Unconventional approaches to Artificial Intelligence. This is a special topics course I developed. The teaching material is available online here:

https://github.com/neelsoumya/special_topics_unconventional_AI

I have also developed materials for and taught a course on reproducible research in R:

https://github.com/neelsoumya/teaching_reproducible_science_R

I also teach data science courses and visualization. Some course materials are available here:

https://github.com/neelsoumya/visualization_lecture

I have taught machine learning, complex systems, and basics of programming. All my teaching material is available here:

<https://sites.google.com/site/neelsoumya/teaching>

Other teaching activities are outlined below:

- 1) Cambridge-Africa Programme, University of Cambridge, 2020 (lectures)
- 2) Oxford Summer School in Economic Networks, Mathematical Institute, University of Oxford, 2017 (lectures and tutorials)
- 3) Trained in teaching at the University of Oxford Doctoral Training Center, 2017
- 4) Lectured at the Complex Adaptive Systems course in Department of Computer Science, University of New Mexico, USA, 2009-2012 (lectures and tutorials on complex systems and computer science)
- 5) Co-designed teaching resources with educators to make my teaching broadly accessible (samples of my teaching material are available online <https://www.simiode.org/resources/3206> and <https://osf.io/25gnz/>)

SUPERVISIONS

I have supervised 9 MPhil students and 2 summer interns.

ACADEMIC SERVICE

- 1) Served on recruitment panels for recruiting PhD and MPhil/MSc students
- 2) Program committee member of International Conference on Artificial Immune Systems
- 3) Program committee member for ECML-PKDD Workshop on Hybrid Human-Machine Learning and Decision Making, 2023
- 4) Review Editor for Frontiers in Virology