Dr SWAPNIL MISHRA

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Research Profile

My current research focuses on developing flexible and scalable models for understanding various spatiotemporal data, for example, epidemics (COVID-19, Malaria, HIV), crime and social media. My work focuses on algorithms to model point processes with classical machine learning techniques as well as using modern deep learning networks, mainly recurrent networks. I have led and produced high impact work (published in journals such as Nature, Science, and the Lancet) that has garnered 4.5k+ citations. My career H-Index is 20 and I10 index is 22.

Education, Academic and Teaching

Education

2015 – 2019 PhD   **Australian National University** – Computational Social Science, Research School of Computer Science
Thesis title: Linking Models for Collective Attention in Social Media.

2012 – 2014 MSc   **Australian National University** – Machine Learning, Research School of Computer Science
Thesis title: Implementation and Experiments with Novel Parallel and Bursty Non-parametric Topic Models

2005 – 2009 BEng   **University of Pune** - Computer Engineering, Department of Computer Engineering
Thesis title: The manufacture of bioethanol from corn starch.

Academic Positions

2019 - present   **Imperial College London – Postdoctoral researcher in Geostatistics**
2015 - 2019   **Australian National University – Research Assistant:** Computational Media Lab
2014 - 2015   **Data61 (CSIRO) – Research Assistant:** *Optimisation research Group*
2012 - 2014   **Australian National University/Data61(NICTA) – Research Assistant:** *Machine learning research Group*

Teaching and Supervision Experience

2020 - Present   **MSc secondary supervisor** (Yiyong Luo)
2020 - Present   **MSc secondary supervisor** (Tom Keane)
2019 - Present   **PhD secondary supervisor** (Helen Coupland)
2019   **Undergraduate Summer Project secondary supervisor** (Avish Vijayraghavan)
2018 - 2019   **Australian National University –** Co-lecturer, Introduction to Data Management, Analysis and Security
2017 - 2018   **Australian National University –** Co-lecturer, Introduction to Programming for Data Scientists
2013 - 2018   **Australian National University –** Head Teaching Assistant, Document Analysis
2013 - 2014   **Australian National University –** Head Teaching Assistant, Introduction to Programming for Scientists
2008 - 2011   **University of Pune-** Head Teaching Assistant, Robotics

Grants

2020   **Imperial COVID-19 Response Fund (£46,975)** (Co-I)
2020   **Microsoft AI for Health program ($130,000)** (Co-I)
2018   **Amazon AWS Compute Grant ($45,000)** (Co-I)

Consulting

2020   **New York State:** Advisory group for COVID-19 response
2020   **Herbert Smith Freehils:** Advisory group for COVID-19 response

Selected Invited/Keynote speaker Presentations

2020   Keynote lecture: Scalable Mechanistic Bayesian Models for COVID-19 Transmissions, Stan-Con 2020
2020   Invited lecture: Estimating the number of infections and the impact of non-pharmaceutical interventions on COVID-19, European Consortium of Mathematics in Industry
2020   Invited lecture: Estimating the number of infections and R(t) for COVID-19 with a Semi-mechanistic Hierarchical Bayesian Model, DeepMind
2019.   Invited lecture: VAE to learn functions, RSS 2019, Belfast
2019   Invited lecture: Linking Models of Popularity in Social Media, Monash University

Scholarships, prizes and awards

2018   ICWSM Student Travel Award
2018   ANU Vice Chancellor Travel Grant
2018   ANU Domestic PhD scholarship

2016	CIKM Vice Chancellor Travel Grant
2015	Australia International Student PhD scholarship
2014	KDD Travel Grant
2012	ABU Robocon Misumi Sponsors Award (Team India)
2012	ABU Robocon Mabuchi Motor Award (Team India)

Publication Summary

Total number of peer-reviewed publications: 24
Conference publications: 5
Citation information: 4,500+ Citations
H-index: 20
I10-Index: 22

3 Papers published in Nature (2 first author),
3 Papers published in Science (1 first author, 1 senior author),
3 Paper in Nature Communications (1 first author)
1 Paper in the Lancet,
1 Upcoming Nature Communications Paper (first author)
1 Upcoming Proceedings of The Royal Society A

Selected Publications

1. Flaxman, S., **Mishra, S.,** Gandy, A. *et al.* Estimating the effects of non-pharmaceutical interventions on COVID-19 in Europe. *Nature* 584, 257–261 (2020). https://doi.org/10.1038/s41586-020-2405-7 **(Equal contribution first author)**

2. Volz, **Mishra, S.,** E., Chand, M. *et al.* Assessing transmissibility of SARS-CoV-2 lineage B.1.1.7 in England. *Nature* (2021). https://doi.org/10.1038/s41586-021-03470-x **(Equal contribution first author)**

3. Faria, N. R., Mellan, T. A., Whittaker, C., Claro, I. M., Candido, **Mishra, S.**, D. d. S.,...Sabino, E. C. (2021). Genomics and epidemiology of the P.1 SARS-CoV-2 lineage in Manaus, Brazil. Science, eabh2644. doi: 10.1126/science.abh2644**(Equal contribution first author)**

4. Unwin, H.J.T., **Mishra, S.**, Bradley, V.C. *et al.* State-level tracking of COVID-19 in the United States. *Nat Commun* 11, 6189 (2020). https://doi.org/10.1038/s41467-020-19652-6 **(Equal contribution first author)**

5. Monod, Mélodie, et al. "Age groups that sustain resurging COVID-19 epidemics in the United States." Science, vol. 371, no. 6536, 26 Mar. 2021, p. eabe8372, doi:10.1126/science.abe8372. **(Senior author)**

6. Okell, Lucy C., et al. "Have deaths from COVID-19 in Europe plateaued due to herd immunity?" Lancet, vol. 395, no. 10241, 20 June 2020, pp. e110-e111, doi:10.1016/S0140-6736(20)31357-X.

Full publication lists

Google Scholar
https://scholar.google.co.uk/citations?user=RqbpaXcAAAAJ&hl=en