



Infectious  
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## Asst Prof Swapnil Mishra

National University of Singapore  
Saw Swee Hock School of Public Health &  
Institute of Data Science, Singapore

**Wednesday, 1 March 2023**  
3:00pm to 4:00pm (SGT)

**Venue:**

Cysteine and Glycine Meeting Rooms  
30 Biopolis Street, #07-01  
Matrix Building, Singapore 138671

### Aspects of modelling COVID-19: Understanding and quantifying the uncertainty

Despite modern medicine and epidemiological control trends, the risk for novel outbreaks and previously existing pathogens is more significant than ever. Indeed, the current outbreak of SARS-CoV-2 has exposed the need for precise, robust, and principled mathematical modelling of disease outbreaks that can perform well with noisy and potentially biased data. To tackle these challenges, I will present a unifying view of modelling infectious diseases that contributes to the new understanding of the spread of the diseases and their epidemiological properties. The unified framework allows flexible probabilistic models that are capable of fitting complex and noisy data from different sources. I will touch upon how the new unified framework, built using Stan (numpyro), has helped us to characterize the initial spread of SARS-CoV-2 and quantify the altered epidemiological characteristics of various 'variants of concerns (VOCs)'.

**Swapnil Mishra** is an Assistant Professor at National University of Singapore (NUS), where he is primarily working at intersection of public health, machine learning and Bayesian modelling. He is part of the "Machine Learning & Global Health Network", which is a multi-country and multi-organisation network focused on doing fundamental research in machine learning and problems related to global health.

Seminar is open to all . No registration required

Questions? Contact us at [seminars@idlabs.a-star.edu.sg](mailto:seminars@idlabs.a-star.edu.sg)

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