

**Robust Agent-Based Modelling at Scale Workshop**  
**7<sup>th</sup>–8<sup>th</sup> April 2022, St Hilda's College, Oxford & Remote participation**  
**Workshop Schedule**

**Thursday 7<sup>th</sup> April**

9.30 - 10.00 Registration & coffee

10.00 - 10.30 Welcome, project overview – Mike Wooldridge (University of Oxford)

**Session 1: Agent-based modelling: Theory and Applications**

10.30 - 11.00 Seth Flaxman (University of Oxford) AI Lessons from the Pandemic

11.00 - 11.30 Sumitra Ganesh (J.P.Morgan AI Research) RL-driven Agent-based Modeling

11.30 - 12.00 Lukasz Szpruch (University of Edinburgh & ATI) Multi agent RL from Stochastic Control Perspective

12.00 - 12.30 Silvia Sapora (Facebook) WW: Cyber-cyber digital twin at Meta – simulating user behaviours

**12.30 - 1.30 LUNCH**

**Session 2: Agent-based methods & Tools**

1.30 - 2.00 Jordan Langham-Lopez (Improbable) Vogue: A high performance Python ABM framework (remote talk)

2.00 - 2.30 Rob Axtell (George Mason, Santa Fe Institute, MIT) Performance of Large-Scale Agent Models Running in Parallel: Desiderata and Practical Realities (remote talk)

2.30 - 3.00 Michael Bronstein (University of Oxford & Twitter) Graph neural networks, geometric flows, and neural diffusion (remote talk)

3.00 - 3.30 COFFEE BREAK

**Session 3: Calibrating agent-based models**

3.30 - 4.00 Arnau Quera-Bofarull (University of Oxford) Calibrating large-scale ABM models with Bayesian Emulation and History Matching

4.00 - 4.30 Sebastian Schmon & Patrick Cannon (Improbable) Bayesian approaches for calibration and validation of ABMs

4.30 - 5.30 Panel Discussion & close

**6.45 Pre-dinner drink**

**7.15 Dinner**

**Friday 8<sup>th</sup> April**

**Session 4: Domain-specific agent-based models**

9.00 – 9.30 Coffee

9.30 - 10.00 Richard Bailey (University of Oxford) Building adaptive agents for environmental settings

10.00 - 10.30 Alexandra Brintrup (University of Cambridge) Agent-based systems in supply chain management

**Session 5: Applications**

10.30 - 11.00 Rahul Savani (University of Liverpool) Building Market Making Agents with Reinforcement Learning

11.00 – 11.30 Amy Stoner (Vodafone) The road to Zero Touch Operations within Vodafone (remote talk)

11.30 – 12.30 Panel Discussion: Research Priorities for Agent-based modelling

**12.30 - 1.30 LUNCH & CLOSE**