Yuanmo He

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EXPERIENCE

Doctoral Researcher in Computational Social Science 09/2020 - present

The London School of Economics and Political Science (LSE)

- Designed and executed research projects that uses advanced quantitative and computational methods (including machine learning, natural language processing, and social network analysis) to study socioeconomic inequality in daily behaviour and social interactions with large-scale digital trace data.

Project 1: A Method for Estimating Individual Socioeconomic Status of Twitter Users.

- **Proposed a new unsupervised learning method** to estimate individual Twitter users' socioeconomic status (SES) that is data economical, computationally efficient, scalable, and firmly embedded in classical social theories.
- Estimated ~3.5 million Twitter users' SES (prior studies' benchmarks ~50,000) and validated the estimates by showing significant correlations with conventional SES proxies: income, education, and occupational social class.
- Utilized **R, Python, SQL, Azure Cloud Computing, Twitter API, Google Geocoding API, Facebook Marketing API** to collect, process, and analyse 190 million rows of data for estimating and validating the SES of Twitter users.
- Conference Presentations: **International Conference on Computational Social Science** (IC2S2, top conference in computational social science), online, 2021; The **Annual Meeting of the American Sociological Association** (ASA, top conference in sociology), online, 2021; General Online Research, online, 2021.
- Publication: **Yuanmo He** and Milena Tsvetkova. 2023. A Method for Estimating Individual Socioeconomic Status of Twitter Users. *Sociological Methods & Research*, https://doi.org/10.1177/00491241231168665. (**Impact Factor 6.3**; top journal in the fields of quantitative social science and sociology,)

Project 2: Millions of Mobile-tracked Visits Reveal Socioeconomic Inequality of Daily Consumption.

- **Proposed a new theoretical argument** to incorporate insights from sociology, economics, social psychology, and consumer research that high socioeconomic status is associated with more diverse consumption practices.
- Used **Python** to process and analyse data of millions of visits to points of interest (POIs) in the New York State and Texas, linking mobile-tracking data, US Census data, and Yelp data.
- Employed standardised regression models to prove that income predominantly predicts consumption diversity, even after controlling for local availability, geographic mobility, income variability, age, gender, education, and race.
- Conference Presentations: **IC2S2**, Copenhagen, DK, 2023 (Awarded **Honourable mentions**, co-author presented); **ASA**, Philadelphia, US, 2023; The Annual Conference of the International Network of Analytical Sociologists, Princeton, US, 2023; European Conference on Social Networks, London, UK, 2022

Class Teacher/Graduate Teaching Assistant (multiple posts), LSE 09/2021 – 04/2023

- Courses: Computer Programming, Applied Machine Learning, Introduction to Data Science and Machine Learning
- **Communicated** theoretical concepts and practical implementations of computer programming, machine learning, and natural language processing to students with **diverse academic, technical, and cultural backgrounds**.
- **Led** daily 1.5-hour computer lab teaching to two classes of 20+ students on understanding and performing **machine learning and quantitative text analysis with R** at an intensive three-week LSE summer school course. Adjusted the teaching materials to be updated and relevant. Graded mid-term and final projects in R.
- Assisted weekly/biweekly 1.5/2-hour computer lab teaching to classes of 30+ students on **computer programming with Python & R and machine learning & deep learning with R**.

EDUCATION AND HONORS

PhD Social Research Methods, The London School of Economics and Political Science (LSE) 09/2020 – 09/2024

- Supervisors: Milena Tsvetkova and Kenneth Benoit.
- Awarded the **LSE PhD Studentship** for four years (£136,772).
- Additional training/research visit: Complex Systems Summer School, Santa Fe Institute, 2023

MSc Applied Social Data Science (Distinction), LSE 09/2019 - 09/2020

- **Distinction in all modules**: Computer Programming, Data for Data Scientist, Applied Machine learning, Quantitative Text Analysis, Multivariate Analysis and Measurement, Fundamentals of Social Science Research Design.

BSc Social Sciences (First Class Honours), University College London (UCL) 09/2016 - 06/2019

- Relevant modules: Quantitative Research Methods, Causal Analysis, Social Networks, Game Theory
- Awarded the UCL Institute of Education **Faculty Medal** (the best final year undergraduate student in the faculty).
- Achieved **the highest final grade** of all graduates in the Social Research Institute.

SKILLS AND INTERESTS

Programming language & statistical software: Python, R, SQL, Git, Stata, SPSS

Python packages: NumPy, SciPy, pandas, scikit-learn, Matplotlib, NetworkX, PyTorch (non-exhaustive)

R packages: tidyverse, tm, quanteda, glmnet, tree, randomForest, e1071, igraph, statnet (non-exhaustive)

Advanced Data Analysis: machine learning, natural language processing, social network analysis, multivariate analysis, causal analysis, parallel computing, cloud computing

Languages: Chinese (native), English (full professional proficiency)

Stand-up Comedy: Performed at a departmental party and two academic workshops. Trying to find time for comedy clubs.