

# Yuchen Zhu

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## Research Statement

I am a PhD student researcher passionate about developing responsible AI methodologies for applications in healthcare and social science domains. This led me to my current focus on combining causal inference with modern machine learning methods for responsible decision making.

## Education

- 10.2020 - Present**    **PhD, Foundational Artificial Intelligence**  
University College London, United Kingdom
- 10.2018 - 09.2020**    **MSc, Machine Learning (Distinction)**  
University College London, United Kingdom
- 10.2015 - 06.2018**    **BA, Mathematics (Upper Second Class Honours)**  
University of Cambridge, King's College, United Kingdom

## Research Experience

- 06.2022 - Present**    **Industrial Research Internship**  
Amazon Research Tuebingen, Germany  
**Manager:** Dominik Janzing  
**Topic:** Causal Aggregation of Micro-Variables
- 10.2021 - 09.2020**    **Industrial research collaboration for Master's thesis**  
Sana Labs, Stockholm (remote)  
**Topic:** Causal machine learning for educational recommender systems.  
**Description:** I suggested my own Master's research project, and obtained relevant data from an EdTech startup. I developed theory and algorithms for estimating treatment effects under hidden confounding for online education.  
**Thesis grade:** Distinction
- 10.2015 - 06.2018**    **Industrial Research Internship**  
Pace Revenue, London  
**Topic:** Reinforcement Learning for Pricing Automation  
**Contribution:** I implemented the company's first simulation library of RL agents for pricing, using python and tensorflow. For scalability I built cloud training infrastructure for parallel training using Docker, Kubernetes and Argo, which was capable of running 500+ jobs simultaneously. To monitor code quality I wrote unit tests to ensure robustness of my research package.
- 10.2015 - 06.2018**    **Academic Research Internship**  
DPMMS, University of Cambridge, United Kingdom  
**Topic:** Optimal Flow Estimation

## Publications

UAI 2022 (Oral, 5% acceptance rate)	Causal Inference Under Treatment Measurement Error: A Nonparametric Instrumental Variable Approach.  Yuchen Zhu, Limor Gultchin, Arthur Gretton, Matt Kusner, Ricardo Silva
NeurIPS 2021	Causal Effect Inference for Structured Treatment  Jean Kaddour, Yuchen Zhu, Qi Liu, Matt Kusner, Ricardo Silva
ICML 2021	Proximal Causal Learning with Kernels: Two-stage Estimation and Moment Restriction  (*Equal Contribution) Afsaneh Mastouri*, Yuchen Zhu*, Limor Gultchin, Anna Korba, Ricardo Silva, Matt Kusner, Arthur Gretton, Krikamol Muandet

## Awards and Distinctions

2018	SRIM Summer Research Grant, University of Cambridge (£2000)
2016	King's College Cambridge Travel Award. For charity work with Education Partnerships Africa (£1000)
2016	Bangor Rotary Club grant. For charity work with Education Partnerships Africa (£400)
2015	Honorable Mention from school for entry into Oxbridge/Ivy League (only entry from my cohort).
2015	F.C.Baines Scholarship, David Hughes School (£300)
2014	British Mathematical Olympiad. (Silver Medal, ranked 36th in the UK.)
2013, 2014	UK Senior Maths Challenge 2013, 2014. (Gold, Gold)

## Service

2022	Academic Service: Reviewer for NeurIPS conference, ICML SCIS workshop.
2021	Academic Service: Reviewer and volunteer for NeurIPS MLECON workshop.
2016	Social Service: Volunteer educational project management work for Education Partnerships Africa.

## Skills

**Programming languages:** Python, Matlab (Advanced), R (basic).

**Platforms:** Git, LaTeX

**Languages:** English (Bilingual proficiency), Mandarin (Native)