

## PhD Researcher | AI-Driven Market Design & Economic-Inspired AI Decision-Making

PhD candidate in statistics researching the intersection of machine learning and economics. I develop market-driven AI mechanisms for digital economies, including data, privacy, and AI derivatives; and design AI systems that adapt to economic incentives, such as LLM-powered ad auctions and retrieval-based uncertainty quantification. Experienced in data analysis since my senior year of college, I excel at presenting research, communicating complex ideas, and collaborating across disciplines.

### EDUCATION

<b>PhD in Statistics &amp; Data Science   Econ ML</b> • University of California, Los Angeles	09/2021 – 12/2026
<b>MA in Statistics in Statistics</b> • Columbia University in the City of New York	09/2019 – 12/2020
<b>Double BS's in Probability &amp; Statistics, Management Science</b> • UC, San Diego	09/2015 – 06/2019

### RESEARCH EXPERIENCE

#### PhD Researcher 02/2023 – Present UC Los Angeles

- Designed a two-phase pricing mechanism that combines digital-good auctions with posted pricing, enabling scalable and revenue-optimal dataset sales in dynamic markets with highly variable buyer participation.
- Developed an online learning algorithm for multi-dataset sales, ensuring adaptive pricing strategies and rapid regret convergence, optimizing long-term revenue in evolving marketplaces.
- Building a decentralized privacy market where an LLM matches buyer proposals with seller-defined granular privacy controls, enabling effortless, truthful, and incentive-aligned trading.
- Integrating uncertainty quantification into AI chatbots, especially healthcare AI, by statistically interpreting retrieved information to assess confidence in recommendations.

#### Independent Researcher 12/2019 – 03/2020 Columbia University

- Refined a Bayesian hierarchical sparse VAR model for multi-subject, multi-session fMRI analysis and designed Gibbs sampling simulations on a high-performance computing cluster to test model stability.

### TEACHING & LEADERSHIP

#### Teaching Associate, UC Los Angeles & Columbia University 06/2021 – 12/2026

- Developed and led discussion and lab sessions for probability, statistical inference, computational methods, R programming, and optimization.

#### Group Leader, Data Analysis and Inference Capstone, UC San Diego 03/2018 – 06/2018

- Led a team of six in a fast-paced, real-world data-driven project course, designing problems, guiding statistical analysis, facilitating collaboration, and overseeing timely execution.

### SKILLS

**Programming:** Python (SciPy, TensorFlow, PyTorch, rpy2), R, SQL, SAS, HPC & Distributed Processing

**AI & Optimization:** LLMs, uncertainty quantification, reinforcement learning, online learning & regret analysis

**Economics:** causal inference, A/B testing, game theory, mechanism design, auction theory, econometrics