Pranav Subramaniam
5730 S Ellis Ave, Chicago, IL.
psubramaniam@uchicago.edu

EDUCATION

- Ph.D in Computer Science (2019-2024)
  - The University of Chicago
  - Research Area: Data Markets
- BS Computer Science(Hons.) and Mathematics 3.81/4.0 (2015 – 2019)
  - The University of Chicago
  - **Computer Science GPA: 3.93**
  - **Mathematics GPA: 3.81**
- Mathematics/CS, Non-degree Student 3.96/4.0 (2014 - 2015)
  - University of Nebraska-Omaha.

AWARDS/HONORS

- NSF Graduate Research Fellow
- The University of Chicago-Eckhardt Graduate Fellowship
- The University of Chicago-College Research Fellow
- The University of Chicago-Stamps Leadership Merit Scholar

RELEVANT COURSES

- Market Design
- Planning, Learning, and Estimation for Robotics
- Math for Machine Learning
- Linear Algebra

PUBLICATIONS

1. R. Castro Fernandez, **P. Subramaniam**, and M. Franklin, *Data Market Platforms: Trading Data Assets to Solve Data Problems*, arXiv:cs.DB/2002.01047
2. **P. Subramaniam**, *Generating Selective Filters for Access Method and Physical Design Evaluation*, SIGMOD Student Research Competition, 2019.
3. C. Liu, M. Umbenhower, H. Jiang, **P. Subramaniam**, J. Ma, A. Elmore, *Mostly Order Preserving Dictionaries*, In International Conference on Data Engineering (*ICDE*), 2019.
4. J. Yang, C. Yan, **P. Subramaniam**, S. Lu, and A. Cheung, *PowerStation: Automatically Detecting and Fixing Inefficiencies of Database-Backed Web Applications in IDE*, In Foundations of Software Engineering (*FSE*), 2018.
5. J. Yang, C. Yan, **P. Subramaniam**, S. Lu, and A. Cheung, *How not to structure your database-backed web applications: a study of performance bugs in the wild*, International Conference on Software Engineering (*ICSE*), 2018.
6. **P. Subramaniam** and A. Parakh (2016), *A quantum Diffie-Hellman protocol*, International Journal of Security and Networks: Vol. 11, Issue 4, p. 213-223.
7. P. Chundi and **P. Subramaniam** (2014), *An Approach to Analyze Web Privacy Policy Documents*, ACM KDD 2014 Workshop on Data Science for Social Good.
8. **P. Subramaniam** and A. Parakh (2014), *A Quantum Diffie-Hellman Protocol Using Commuting Transformations*, in Proceedings IEEE ANTS 2014: 1-6.
9. **P. Subramaniam** and A. Parakh (2014), *Limits on Detecting an Eavesdropper in QKD Protocols*, IEEE ANTS 2014: 1-3.
10. **P. Subramaniam** and A. Parakh, *A Quantum Diffie-Hellman Protocol*, 2014 IEEE 11th International Conference on Mobile Ad Hoc and Sensor Systems, Philadelphia, PA, 2014.

Summary of Interest

Modern decision-making relies on sophisticated AI models that achieve high accuracy on a wide variety of tasks, provided they are trained on enough data. Although data is abundant, discovering and integrating relevant datasets to create the best training datasets is an expensive manual process for firms, due to the lack of discovery and integration methods that can handle the volume of data available.

I am a first-year PhD student studying markets for data assets with Profs. Raul Castro Fernandez and Michael Franklin at the University of Chicago. I am interested in understanding the economic implications of alleviating these discovery and integration costs on a firm's decision-making quality. Recently, we released a paper outlining our vision for a data asset market in which these discovery and integration processes are automated, lowering their cost. Although it seems this cost reduction can raise the overall value extracted from data assets, I would like to explore the specific impacts of this cost reduction on a firm's decision-making abilities.

As a PhD student in computer science, I am familiar with the mechanics of AI: I have been exposed to the fundamental notions of machine learning through coursework, and I have also learned deep learning and reinforcement learning ideas in the context of robotics. To develop the conceptual framework to answer this question, I am taking a market design course. I believe the NBER Young Scholars Workshop on the Economics of Artificial Intelligence would help me further enrich my understanding of the data-to-decision process, and the value of the data assets that power the AI models used in decision-making processes. With my experience in AI, my exposure to market design, and my understanding of discovery and integration costs, I believe I could make significant contributions to this workshop.