Application for Doctoral Student Workshop on Economics of Artificial Intelligence

Dear organizers,

Thanks for your setting up this workshop! I'd like to apply to participate. My resume is attached on the next page, including contact information. What follows is is my statement of interest.

I have been studying topics at the intersection of AI and economics since early on in my PhD. Specifically, a large chunk of my research asks how learning theory — computer science's theoretical framework for machine learning — can be combined with economic modeling to produce more tangible recommendations for policymakers and managers.

One theme of this work is that we can construct more credible models of bounded rationality by modeling agents that are learning over time, rather than agents that have substantial prior knowledge or accurate beliefs. Work in learning theory has produced excellent frameworks for understanding how well agents can be expected to learn, as a function of the amount of data, the nature of the data, and complexity of the decision problem.

Another theme is that economic models in mechanism/contract/information design can be taken to data directly, at least in principle, in order to aid policymaking in particular situations. However, these data-driven design problems often have more in common with approaches like PAC learning and reinforcement learning than traditional econometric methods.

My co-authors and I have published some of this work in a top theoretical computer science conference (FOCS) that we are preparing for submission to an economics journal. I have another work-in-progress that looks at similar questions from a different perspective. Besides, there are other questions related to the economics-AI interface that interest me, and I think this would be a great opportunity to be exposed to some of them. Thanks for your consideration!

Best,

Modibo

MODIBO K. CAMARA

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Education

Aug. 2016 to present

Northwestern University (Department of Economics)

- PhD candidate, co-advised by Eddie Dekel (Econ) and Jason Hartline (CS)
- Major focus of study is in microeconomic theory, minor focus in theoretical computer science and econometrics. Coursework includes second-year courses in each area.

Aug. 2012 to May 2016

University of Pennsylvania (School of Arts & Sciences)

- B.A. with majors in Math, Economics, minor in Computer Science

Work Experience

Jun. 2020 to Sep. 2020

Research Intern, at the **Microsoft Research Lab (NYC)**

- In the Economics & Computation group, under Dr. Nicole Immorlica

May 2015 to Aug. 2015

Project Intern, at the **Federal Reserve Board of Governors**

- In the Division of Monetary Affairs, under Dr. Yian Liu

May 2014 to Aug. 2014

Intern, at the **U.S. Commodity Futures Trading Commission**

- In the Office of the Chief Economist, under Dr. Esen Onur

Publications

"Mechanisms for a No-Regret Agent: Beyond the Common Prior," with Jason Hartline and Aleck Johnsen, *2020 IEEE 61st Annual Symposium on Foundations of Computer Science (FOCS)*, Durham, NC, USA, 2020, pp. 259-270

Teaching Experience

Teaching Assistant for Econometrics II and III (*graduate*), Economics of Networks, Intermediate Micro, Intro to Game Theory, Applied Econometrics (*undergraduate*).

Miscellaneous

Refereeing: American Economic Review

Invited Talks: Cornell ORIE; Economics and Computation 2021 (“Highlights Beyond EC”)