My interest in studying AI is rooted in the broad spectrum of potential economic applications that benefit from the introduction of AI tools. Although I have experience with and appreciation for machine learning techniques that enhance model building, such as penalized regression, I am primarily interested in new AI techniques that allow us to extract data for quantitative analysis from formats that were traditionally not able to be used for economic research. Most of my experience in this regard has been with text and natural language processing: I am currently involved in a project involving news data that has benefited tremendously from advances in NLP. My coauthor and I intend to use a natural experiment framework surrounding a Facebook algorithm shift to look at the impact of social media on news selection, especially opinion news. Our ability to categorize and sort news article rests entirely on advances in AI – specifically the Stanford CoreNLP Toolkit – in that we are able to process the text of the vast corpus of online articles to identify their topics and place them into categories in a purely automated way. It was only through advances in AI that we were able to study an interesting question in a manner that was formerly impossible.

I am hoping to learn more about the latest developments in NLP, especially advances in word and sentence embedding to apply to this and other projects. Although we have been able to identify the topics of articles thus far, we have yet to develop a sophisticated method of identifying opinion articles specifically, and I believe these techniques will be of much use for that. I am also looking forward to finding out about new topics and areas where AI techniques are being applied across economics.

Michael Kurish

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EDUCATION

University of Pennsylvania, The Wharton School **Philadelphia, PA**
Marketing PhD July 2017 – Present
Selected Coursework: Microeconomic Theory Sequence, Econometrics Sequence, Econometrics III – Microeconometrics, Empirical Industrial Organization, Research Methods (Experimental Design and Analysis), Nonparametric & Machine Learning Methods

Columbia University, Columbia College **New York, NY**
Bachelor of Arts in Economics May 2012

TECHNICAL PROFILE

Strong: Python, R, SQL, Scope (internal Microsoft distributed big-data query language), VBA, Stata

Familiar: C#, Java, MATLAB

Other Software: Office Suite (Access, Word, Excel, PowerPoint), LaTeX, Windows PowerShell

EXPERIENCE

Microsoft Research **Cambridge, MA**
Empirical Economics Research Assistant June 2015 – June 2017

- Assisted researchers Greg Lewis, Justin Rao, Giorgos Zervas, and Denis Nekipelov
- Programmed solutions to research problems in various general purpose and statistical languages

Selected Projects and Experience

- **Economic Impact of Hotel Online Ratings Platforms** (with Greg Lewis and Giorgos Zervas)
  - Cleaned and prepared a 10 year panel dataset of over 10,000 hotels in the western United States using Python and SQL
  - Modeled returns to hotel ratings on popular platforms using time series regressions with high dimensional fixed effects
  - Automated outputs using Stata and LaTeX; generated data visualizations using R and Stata

- **Business Self-Advertising in Search Ads** (with Justin Rao and Denis Nekipelov)
  - Analyzed returns to individual brands when choosing to advertise on searches for their brand
  - Used machine learning tools optimized for parallel computing in Scope and C# to implement model selection
  - Developed an automated pipeline using PowerShell and Scope to run hundreds of difference-in-difference regressions
  - Optimized code to implement a propensity-score matching model for 9 TB of search data

American Homes 4 Rent **Agoura Hills, CA**
Staff Accountant II, Accounting and Finance Department February 2015 – June 2015

- Developed, maintained, and updated VBA programs to automate and organize data-related tasks for self and team
- Integrated SQL code into VBA programs to feed a central database which tracked metadata on accounting processes

Columbia University **New York, NY**
Research Assistant, Economics Department March 2014 – December 2014

- Worked with graduate student Elliott Ash and professor W. Bentley MacLeod to gather data for a legal economics paper
- Supervised a team of five undergraduate researchers to manually and algorithmically check the data set before publication

Bank of America Merrill Lynch **New York, NY**
Analyst, Ultra Structured Solutions July 2012 – February 2014

- Supported a cross-asset class structured product sales group with over $5 billion in outstanding notional trade volume
- Liaised with clients for the purposes of providing trading ideas, execution, and relationship management
- Programmed automated document generation using Excel VBA to eliminate hours of drafting tasks

HONORS & INTERESTS

Honors: NSF Graduate Research Fellowship – Honorable Mention, Wharton George James 1st Year Doctoral Fellowship

Interests: Banjo/Roots Music, Running, Football, Travel