Bowen Lou

Contact Information

The Wharton School, OID Department
500 Jon M. Huntsman Hall
3730 Walnut Street
Philadelphia, PA, 19104

Phone number: +1 (773) 988-3840
Email: bowenlou@wharton.upenn.edu
Website: www.bowenlou.org

Selected Coursework

- **Economics** Microeconomic Theory, Game Theory, Decision Processes and Behavioral Economics Seminar(Prof Uri Simonsohn), Numerical Methods in Economics(Prof Ulrich Doraszelski), Empirical Methods for Industrial Organization(Prof Aviv Nevo)
- **Statistics** Online Methods in Machine Learning, Topics in Machine Learning & Econometrics, Applied Econometrics(Prof Paul Shaman), Observational Studies(Prof Dylan Small), Data Analytics and Statistical Computing(Prof Andreas Buja), Advanced Data Analytics(Leskovec, Rajaraman and Ullman's book), Data Mining(Prof Matt Taddy)
- **Information Management & Strategy** Information Strategy and Economics(Prof Lorin Hitt), Pro-Seminar in Technology Strategy & Innovation, Corporate Strategy(Prof Harbir Singh)
- **Operations Management** Optimization, Operations Management Seminar(Prof Xuanming Su)
- **Sociology** Organizational Analysis(Prof Edward Laumann), Computational Social Science
- **Computer Science** Databases, Data Warehousing, Algorithms, Computer Systems, Object Oriented Architecture, Practicum Project on Network Analysis of Natural Language

Education

University of Pennsylvania(UPenn), PA, USA — 2015 - *Present*
Ph.D Candidate, Operations, Information and Decisions (OID) Department, The Wharton School

University of Chicago (UChicago), IL, USA — 2013 - 2014
M.S. in Computer Science, Specialized in Data Analytics

Shanghai Jiao Tong University (SJTU), Shanghai, China — 2009 - 2013
B.Eng in Information Security

University of California, Los Angeles (UCLA), CA, USA — 2011
Visiting Student, Summer School

Research Interest

Topics: Economics of Information Technology; Innovation; IT labor; Social Media; Data Science; Computational Social Science

Methods: Econometrics; Natural Language Processing; Network Science; Machine Learning

Working Paper

1. Lynn Wu, Lorin Hitt, **Bowen Lou**. Data Analytics Skills, Innovation and Firm Productivity.

   Abstract: We examine the relationship between data analytics capabilities and innovation using detailed firm-level data. To measure innovative activity, we utilize a survey on process- and innovation- oriented business practices, and we use patent data to analyze the innovative output and characteristics of firms. We find that data analytics capabilities are more likely to be present and are more valuable in firms that are oriented around process improvement and that innovate by recombining existing technologies; data analytics skills have no effect on or are possibly negatively related to value in firms that focus on generating creative and truly novel innovations. We interpret these findings as consistent with data analytics skills being complementary to the exploitation rather than exploration strategies as described in the technology strategy literature.

2. Lynn Wu, **Bowen Lou**, Lorin Hitt. Data Analytics Skills and the Decentralized Innovation Communities.

   Abstract: We examine the relationship between data analytics and innovation, focusing specifically on how the benefits of analytics may differ depending on how firms organize their innovative activity. Our analysis draws on prior work that has measured firm analytics capability using detailed employee level data and augment these with measures of the organization of innovation using network analysis of patent inventors within a firm and community detection algorithms to determine the extent to which firm has a centralized or decentralized innovative process. In a

panel of large firms spanning 1987 to 2013, we find that firms with a decentralized innovation structure have a greater demand for analytics and receive greater productivity benefits from their analytics capabilities consistent with the argument that analytics are complementary to decentralized innovation. This suggests that data analytics can alleviate a weakness in decentralized innovation by allowing firms to search for knowledge broadly and link distant ideas to create new ones, an advantage previously enjoyed primarily in centralized innovation.

3. Lorin Hitt, Fujie Jin, **Bowen Lou**. Does Employer Brand Matter: Empirical Analysis on Online Job Reviews, Social Media Usage and Firm Performance.

   Abstract: In this study, we look at how employee-contributed job reviews and firm-managed social media posts jointly build up employer brand as an intangible asset and influence market valuation. Using a unique dataset combining job reviews, social media posts and firm performance data, we find that positive job reviews increase firm market value, particularly in labor-intensive industries, and for positions with higher employee mobility. In addition, firms can complement this effect by including more employee-related content on their social media pages. This is likely because different sources of information could jointly influence employees job movement decisions, and firms with stronger employer brands are likely to retain key employees for longer periods of time and save costs in recruiting. Overall, our results indicate that firms should have coordinated strategies across platforms, presenting a consistent employer brand, to maximize their market valuation.

SHORT SUMMARY

Bowen Lou is currently a third-year doctoral candidate in the Operations, Information and Decisions department of the Wharton School, with specialization in Information Systems.
Now his research interest lies in the broad area of economics of information technologies. Bowen is also passionate about proposing or applying eclectic but robust solutions from network science and natural language processing to derive valuable insights in large-scale datasets and solve real-world problems.