

## ALLISON JUNE BARLOW CHANEY

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<b>Research Interests</b>	Develop and use statistical machine learning methods to identify influences on consumer behavior, understand the impact of deployed machine learning methods in real-world markets, and leverage these and other insights to improve the machine learning methods used in industry to increase companies' objectives, individual well-being, and societal welfare.	
	<b>Keywords:</b> Machine learning, Bayesian statistics, computational social science, text analysis (topic models), recommendation systems, fairness/accountability/transparency/ethics in machine learning, causality, visualization.	
<b>Education</b>	<b>Princeton University</b> , Ph.D. Computer Science	2016
	<b>Swarthmore College</b> , B.A. Computer Science and B.S. Engineering	2008
<b>Experience</b>	<b>Assistant Professor</b> , Fuqua School of Business, Duke University	2019 – Present
	<b>Visiting Scholar</b> , Fuqua School of Business, Duke University	2018 – 2019
	<b>IC Postdoctoral Research Fellow</b> , Princeton University	2017 – 2019
	<b>Postdoctoral Research Associate</b> , Princeton University	2016 – 2017
	<b>Research Assistant &amp; Assistant Instructor</b> , Princeton University Taught: Interacting with Data (COS424), Intro. to Computer Science (COS126) Research internships at Microsoft Research (2013) and eBay/Hunch (2012)	2010 – 2016
	<b>Software Engineer</b> , Yorba Foundation	2009 – 2010
	<b>Technical Director Resident</b> , Pixar Animation Studios	2008 – 2009
	<i>Refereed Conference Articles</i>	
<b>Publications</b>	A. Chaney, B. Stewart, B. Engelhardt. <b>How Algorithmic Confounding in Recommendation Systems Increases Homogeneity and Decreases Utility</b> . RecSys, 2018. (arXiv:1710.11214, 2017.)	
	A. Chaney, H. Wallach, M. Connelly, and D. Blei. <b>Detecting and Characterizing Events</b> . EMNLP, 2016.	
	A. Chaney, D. Blei, and T. Eliassi-Rad. <b>A Probabilistic Model for Using Social Networks in Personalized Item Recommendation</b> . RecSys, 2015.	
	A. Chaney, M. Gartrell, J. Hofman, J. Guiver, N. Koenigstein, P. Kohli, and U. Paquet. <b>A Large-scale Exploration of Group Viewing Patterns</b> . TVX, 2014. (Honorable Mention Award, best paper runner-up)	

A. Chaney and D. Blei. **Visualizing topic models**. International AAAI Conference on Social Media and Weblogs, 2012.

*Workshop and Other Papers*

A. Chaney, Y. Shiraito, and B. Stewart. **The Power of Aggregation for Topic Models Used For Measurement**. Text as Data, 2017.

A. Chaney, H. Wallach, and D. Blei. **Who, What, When, Where, and Why? A Computational Approach to Understanding Historical Events Using State Department Cables**. Text as Data, 2015.

A. Chaney, K. Dinakar, H. Lieberman, and D. Blei. **Real-time Topic Models for Crisis Counseling**. KDD Workshop: Data Science for Social Good, 2014.

A. Chaney, P. Gopalan, and D. Blei. **Poisson Trust Factorization for Incorporating Social Networks into Personalized Item Recommendation**. NIPS Workshop: What Difference Does Personalization Make?, 2013.

A. Chaney, M. Gartrell, J. Hofman, J. Guiver, N. Koenigstein, P. Kohli, and U. Paquet. **Mining Large-scale TV Group Viewing Patterns for Group Recommendation**. Microsoft Tech Report, 2013.

**Honors & Awards**    **IC Postdoctoral Research Fellowship**, 2017–2019.

**Rising Stars in EECS**, invited participant, 2016.

**Invited Talks**    **Introduction to Machine Learning: What You Need to Know to Conduct and Interpret Research with ML**  
American Marketing Association Summer Academic Conference, Master Class Session, 2019.

**How Algorithmic Confounding in Recommendation Systems Increases Homogeneity and Decreases Utility**  
Joint Statistical Meetings, Section on Statistics in Marketing (Invited Session), 2019.  
11th Triennial Invitational Choice Symposium, 2019.

**Nonparametric Deconvolution Models**  
Neural Information Processing Systems Bayesian Nonparametrics Workshop, 2018.

**The Social Side of Recommendation Systems: How Groups Shape Our Decisions**  
Duke University, Fuqua School of Business, Marketing Seminar, 2018.  
Washington University in St. Louis, Computer Science Colloquium, 2018.  
Tufts University, Computer Science Colloquium, 2018.  
Yale University, School of Management, Marketing Seminar, 2018.  
Harvey Mudd College, Mathematics Colloquium, 2018.  
University of Massachusetts Amherst, Computer Science Colloquium, 2018.  
Wesleyan University, Computer Science Colloquium, 2018.

### **Detecting and Characterizing Events**

Colby College, Computer Science Colloquium, 2017.  
Brown University, Computer Science Colloquium, 2017.  
Dartmouth College, Computer Science Colloquium, 2017.  
Princeton University, Quantitative Social Science Colloquium, 2016.  
Rutgers University, Computer Science Colloquium, 2015.

### **Social Poisson Factorization**

Cornell University, Artificial Intelligence Seminar (CS 7790), 2016.  
Brigham Young University, Computer Science Colloquium, 2015.

### **Contributed Talks**

Princeton CITP Luncheon Speaker Series, 2019.  
IC Academic Research Symposium, 2018.  
ACM Recommender Systems Conference, 2018.  
Text as Data, 2017.  
Conference on Empirical Methods in Natural Language Processing, 2016.  
ACM Recommender Systems Conference, 2015.  
Text as Data, 2015.

### **Professional Activities**

#### **Women in Machine Learning**

Advisory Council	April 2019 – Present
Vice President, Research & Policy	April 2016 – March 2019
Board of Directors Member	January 2016 – March 2019
Workshop Organizer / Program Chair	2014

#### **Guest Lecturer:**

Princeton University, COS513: Foundations of Probabilistic Modeling  
11/29/2017 Black Box Variational Inference  
10/16/2017 Hidden Markov Models  
Colby College, CS 151: Computational Thinking: Visual Media  
11/17/2017 Recursion  
Princeton University, COS424: Fundamentals of Machine Learning  
3/30/2017 Gaussian Mixture Models

**Journal Reviewer:** PNAS (2018); Transactions on Knowledge and Data Engineering (2016–2017); Information Systems (2017–2018); Data Mining and Knowledge Discovery (2017); Marketing Science (2014–2016); Transactions on Knowledge Discovery from Data (2016); Operations Research (2015); Transactions on Interactive Intelligent Systems (2015)

**Conference Reviewer:** ICML (2015–2018); NeurIPS [formerly NIPS] (2015, 2017–2019); WWW (2018); IC2S2 (2017); ICWSM (2018, 2016, 2015); AISTATS (2016), RecSys (2019)

**Workshop Reviewer:** WiML (2016, 2017, 2019 Area Chair; 2014 Reviewer); NIPS Advances in Approximate Bayesian Inference (2015–2017); NIPS Topic Models (2013); Mid-Atlantic Student Colloquium on Speech, Language and Learning (2011)

#### **Research Mentor:**

Ji Young Huh, Ph.D. student, Business Admin. (Marketing), Duke / Fuqua	2019–Present
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Boya Xu, Ph.D. student, Business Admin. (Marketing), Duke / Fuqua	2019–Present
Seo Young Kyung, Master’s student, Computer Science, Princeton	2018–2019
Thomas Schaffner, Master’s student, Computer Science, Princeton	2017–2018
Archit Verma, Ph.D. student, Chemical and Biological Engineering, Princeton	2016–2019
Bhavdeep Sethi, Masters student, Computer Science, Columbia	2015

## Technical & Other Skills

**Programming Languages:** Python, R, C/C++, Bash, SQL, CSS/HTML, Java, Javascript

**Misc:** LaTeX, Git, SVN, Inkscape, GIMP

**Languages:** English Fluency, Conversational Spanish