

# ALLISON JUNE BARLOW CHANEY

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213.220.0707

- Research Interests** Machine learning, Bayesian statistics, computational social science, text analysis (topic models), recommendation systems, interactive and static visualization.
- Education**
- Princeton University**, Ph.D. Computer Science 2016  
Advisor: David M. Blei
  - Swarthmore College**, B.A. Computer Science and B.S. Engineering 2008
- Experience**
- IC Postdoctoral Research Fellow**, Princeton University Oct. 2017 – Present  
Advisors: Barbara E. Engelhardt, Brandon Stewart
  - Postdoctoral Research Associate**, Princeton University Oct. 2016 – Oct. 2017  
Advisors: Barbara E. Engelhardt, Brandon Stewart
  - Research Assistant**, Princeton University Sept. 2010 – Sept. 2016  
Hiatuses in support for teaching and internships, as listed below.
  - Assistant Instructor**, Princeton University  
Interacting with Data (COS424) Spring 2014  
Selected readings, developed and graded assignments, held office hours.  
*Material:* Graphical models, classification, regression, dimension reduction, sequence models and HMMs, expectation maximization, scalable machine learning.
  - Introduction to Computer Science (COS126) Spring 2013  
Taught 4 hours of precept per week, developed exam questions, held office hours.
  - Research Intern**, Microsoft Research Summer 2013  
Explored Nielsen TV panel data for group recommendation.
  - Research Intern**, eBay/Hunch Summer 2012  
Explored personalized recommendation based on recent user context.
  - Software Engineer**, Yorba Foundation July 2009 – July 2010  
Worked on Shotwell, an open-source photo organizer and editor.
  - Technical Director Resident**, Pixar Animation Studios July 2008 – July 2009  
Prepared material from past productions for Disney themepark attractions.
- Publications**
- In Submission / Preprints*
- A. Chaney, B. Stewart, B. Engelhardt. **How Algorithmic Confounding in Recommendation Systems Increases Homogeneity and Decreases Utility.** arXiv:1710.11214, 2017.

*Refereed Conference Articles*

A. Chaney, H. Wallach, M. Connelly, and D. Blei. **Detecting and Characterizing Events**. EMNLP, 2016. (Oral presentation)

A. Chaney, D. Blei, and T. Eliassi-Rad. **A Probabilistic Model for Using Social Networks in Personalized Item Recommendation**. RecSys, 2015. (Oral presentation)

A. Chaney, M. Gartrell, J. Hofman, J. Guiver, N. Koenigstein, P. Kohli, and U. Paquet. **A Large-scale Exploration of Group Viewing Patterns**. 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. (Oral presentation)

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. (Oral presentation)

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.

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

**Invited Talks**    **Brown University**. Computer Science Colloquium, 2017.

**Princeton University**. Center for Statistics and Machine Learning Lunch & Learn, 2017.

**Dartmouth College**. Computer Science Colloquium, 2017.

**Princeton University**. Quantitative Social Science Colloquium, 2016.

**Cornell University**. Artificial Intelligence Seminar (CS 7790), 2016.

**Rutgers University.** Computer Science Colloquium, 2015.

**Brigham Young University.** Computer Science Colloquium, 2015.

**Professional  
Activities**

**Women in Machine Learning Board Member** January 2016 – Present  
**Women in Machine Learning Workshop Organizer** 2014  
Program Chair, in charge of invited and student speakers, and also mentorship program.

**Guest Lecturer:**

Princeton COS513: Foundations of Probabilistic Modeling, 10/16/2017, Hidden Markov Models.  
Princeton COS424: Fundamentals of Machine Learning, 3/30/2017, Gaussian Mixture Models.

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

**Conference Reviewer:** ICML (2015–2017); NIPS (2015, 2017); WWW (2018); IC2S2 (2017); ICWSM (2016, 2015); AISTATS (2016)

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

**Research Mentor:**

Thomas Schaffner, Masters student, Computer Science, Princeton 2017–Present  
Archit Verma, PhD student, Chemical and Biological Engineering, Princeton 2016–Present  
Bhavdeep Sethi, Masters student, Computer Science, Columbia 2015

**Technical Skills**

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

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

**Additional Skills**

**Languages:** English Fluency, Conversational Spanish

**Volunteering**

**Youth Leader,** Princeton Latter-day Saint (LDS) Congregations  
Spanish-Speaking Congregation January 2016 – June 2017  
English-Speaking Congregation January 2013 – March 2015  
Mentor, teach, tutor, help with college applications, and plan social events for teenage girls.

**Employment & Education Specialist,** LDS Spanish Congregation May 2014 – Dec. 2015  
Taught employment workshops, provided individual career and education counseling.  
Developed and taught a free nine-session SAT prep class in Summer 2015.

**Summer Programming Experiences Mentor,** Princeton Computer Science Summer 2015  
Mentored a group of four freshman students through a programming project.