

# Alexander Miserlis Hoyle

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## EDUCATION

### PhD in Computer Science

University of Maryland  
*Advisor:* Philip Resnik  
*GPA:* 3.93

*Began Fall 2019*

### MSc in Computational Statistics and Machine Learning

University College London  
*Thesis Advisor:* Sebastian Riedel  
Graduated with Distinction (4.0 equivalent)

### BA in Mathematics

Wesleyan University

## REFEREED PUBLICATIONS

- A. Hoyle**, P. Goel, D. Peskov, A. Hian-Cheong, J. Boyd-Graber, and P. Resnik.  
Is Automated Topic Model Evaluation Broken?: The Incoherence of Coherence. *NeurIPS* (Spotlight Presentation). 2021.
- S. Wyckoff-Gaynor, P. Goel, **A. Hoyle**, P. Resnik., and K. Miler.  
Do You Walk the Walk, Talk the Talk, or Tweet the Tweet?: Ideal Points and What They Reveal About Congressional Behavior. *Annual Meeting of the American Political Science Association*. 2021.
- A. Hoyle**, A. Marasović, and N. A. Smith.  
Promoting Graph Awareness in Linearized Graph-to-Text Generation. *Findings of ACL*. 2021.
- P. Rodriguez, J. Barrow, **A. Hoyle**, J. P. Lalor, R. Jia, and J. Boyd-Graber.  
Evaluation Examples are not Equally Informative: How should that change NLP Leaderboards?. *ACL*. 2021.
- A. Hoyle**, P. Goel, and P. Resnik.  
Improving Neural Topic Models using Knowledge Distillation. *EMNLP*. 2020.
- A. Hoyle**, L. Wolf-Sonkin, H. Wallach, I. Augenstein, and R. Cotterell.  
Unsupervised Discovery of Gendered Language through Latent-Variable Modeling. *ACL*. 2019.
- A. Hoyle**, L. Wolf-Sonkin, H. Wallach, R. Cotterell, and I. Augenstein.  
Combining Sentiment Lexica with a Multi-View Variational Autoencoder. *NAACL*. 2019.
- A. Hoyle**.  
Citation Detected: Automated Claim Detection through Natural Language Processing. *UCL Master's thesis*. 2018. *Received Distinction*.

## RESEARCH EXPERIENCE

### PhD Intern, Allen Institute for Artificial Intelligence

- Worked on project to constrain generation of pretrained transformers using structured representations of data. Led to publication in *Findings of ACL* 2021.

### Master's Student and Intern, UCL Machine Reading Group

- For thesis, developed model to determine when factual claims require an external citation for support using Wikipedia data. Constructed dataset and suite of neural architectures in TensorFlow, significantly outperforming baselines.
- Following thesis, collaborated with external researchers to develop generative latent variable model for quantifying gender bias in large text corpora. Devised novel Variational Autoencoder to combine disparate sentiment lexica into common score.

## **Quantitative Analysis Center Research Apprenticeship, Wesleyan University**

- Collaborated on research in child language development with director of cognitive psychology lab.
- Assessed the validity of several competing theories regarding numerical development in children by modeling counting-system acquisition using empirical lab data.
- Delivered a poster presentation and composed a paper on research to incorporate in future lab work.

## **TEACHING AND SERVICE**

### **Graduate Teaching Assistant, University of Maryland**

- Data Science (advanced undergraduate). Approx. 200 students. Spring 2020.
- Machine Learning (advanced undergraduate). Approx. 200 students. Fall 2019.
  - Guest Lecture: Gaussian mixture models and expectation maximization.

### **Mentoring**

- Graduate Student Mentorship Initiative, *Científico Latino*, Fall 2020, Fall 2021. Advised Keren Fuentes in 2020, now a predoctoral intern at Facebook AI Research.

### **Service**

- Graduate Assistant Advisory Committee, Director of Data & Research. Spring 2020–Present.
- Graduate Student Government Representative for Computer Science. Fall 2020–Spring 2021.

## **PROFESSIONAL EXPERIENCE**

### **Senior Research Analyst, The Brattle Group**

- Performed analysis, created reports, and delivered weekly presentations to U.S. Department of Justice to assess conditions of NYC public housing. Results of this work eventually led to restructuring of the housing authority's management, increased oversight, and a \$2.2 billion-dollar settlement.
- Initiated and later led development of large-scale document review tool in Python; created search backend, user interface, classification methods. Tool was used across several white-collar crime projects with government clients.
- Replicated and extended published econometric models for client analyses.

### **Consulting Associate, Frank N. Magid Associates**

- Led analysis and construction of qualitative and quantitative reports for clients in media and marketing; worked directly with clients to meet objectives related to product development and strategy.

## **AWARDS**

Dean's Fellowship for Outstanding Academic Achievement, University of Maryland, 2019-2021

Dean's List, University College London, 2017-2018

Quantitative Analysis Center Research Apprenticeship, Wesleyan University, Summer 2011

## **SELECTED SKILLS**

- Fluent in French
- *Machine Learning and Data Analysis*: TensorFlow, PyTorch, Pyro, R, Pandas, Scikit-Learn, Shiny, SQL, Apache Spark, Excel, SPSS, Stata
- *Development tools*: Python, JavaScript, Django, Apache Solr, Amazon Web Services, Google Cloud Platform

## **GRADUATE COURSEWORK**

- Graphical Models
- Supervised Learning
- Applied Bayesian Methods
- Computational Linguistics
- Statistical Natural Language Processing
- Statistical Models and Data Analysis
- Advanced Deep Learning and Reinforcement Learning
- Unsupervised Learning
- Applied Machine Learning
- Selected Topics in Statistics