Alexander Miserlis Hoyle

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EDUCATION

PhD in Computer Science *Began Fall 2019*
University of Maryland, College Park
Advisor: Philip Resnik
GPA: 3.93

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. *In submission.*

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. 2021.

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. Advised Keren Fuentes, now a predoctoral intern at Facebook AI Research.

Service

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

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