Alexander Miserlis Hoyle

8125 Paint Branch Dr., Room 4108
College Park, MD 20740

hoyle@umd.edu
alexanderhoyle.com

EDUCATION

PhD in Computer Science *Began Fall 2019*
University of Maryland
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, R. Sarkar, P. Goel, and P. Resnik.
Natural Language Decompositions of Implicit Content Enable Better Text Representations. *EMNLP.* 2023.

D. Stammbach, V. Zouhar, **A. Hoyle**, M. Sachan, and E. Ash.
Re-visiting Automated Topic Model Evaluation with Large Language Models. *EMNLP.* 2023.

A. Hoyle, P. Goel, R. Sarkar, and P. Resnik.
Are Automated Neural Topic Models Broken? *Findings of EMNLP.* 2022.

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.*

INVITED TALKS

- University of Massachusetts-Amherst, November 2023
- Stanford University, November 2023
- Bocconi University, November 2023

RESEARCH EXPERIENCE

PhD Intern, FATE Group, Microsoft Research

- Developed framework to generate tests of large language models for responsible AI issues in FATE (Fairness, Accountability, Transparency, and Ethics) group. *In preparation.*

PhD Intern, AllenNLP, 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.

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. (program on hiatus Fall 2022) Advisees accepted as a predoctoral intern at Facebook AI Research and into a master's in Computer Science at USC.
- Pranav Dupelet, UMD CS Undergraduate
- Sander Schulhoff, UMD CS Undergraduate

Service
- Reviewer; TACL, ARR/EMNLP 2022 – 2023
- Graduate Assistant Advisory Committee, Director of Data & Research. Spring 2020–Present.
  - Developed comparative analysis of graduate stipends and presented it to Provost and Dean of Grad. School.
  - Testified before state legislature to advocate for improved graduate conditions.
  - Surveyed graduate assistants about working conditions.
- 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.

GRANTS AND AWARDS
Co-authored Grants
- Effective Few-Shot Learning for Constructs in Psychological and Social Science. *UMD Social Data Science Center Seed Grant*
- Modeling Co-Decisions: A Computational Framework Using Language and Metadata. *NSF (Award No. 2008761)*
- Advanced Topic Modeling Methods to Analyze Text Responses in COVID-19 Survey Data. *NSF (Award No. 2031736)*

Accepted to German Academic Exchange Service (DAAD) as a AInet fellow in Human-centered AI
Goldhaber Travel Award, University of Maryland
International Conference Student Support Award, University of Maryland
Computer Science Department Travel Award, University of Maryland
Dean's Fellowship for Outstanding Academic Achievement, University of Maryland
Dean's List, University College London
Quantitative Analysis Center Research Apprenticeship, Wesleyan University

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