

# Hamza Alshamy

 GitHub |  LinkedIn |  Website |  [ha2486@nyu.edu](mailto:ha2486@nyu.edu)

## EDUCATION

### New York University

Sep 2024 – May 2026

M.S. in Data Science

- Research area: Computational Social Science

B.A. in Economics

May 2024

- Minors: Data Science and Mathematics

## RESEARCH EXPERIENCE

### Center for Conflict and Cooperation

Aug 2025 – Present

RESEARCH ASSISTANT

PI: *Dr. Jay Van Bavel*; Supervisor: *Dr. Laura Globig*

- Developing NLP classifiers and experimental methods to evaluate how social incentives and AI interventions reduce the spread of misinformation and harmful content online.

### Centre for Human-Inspired AI, University of Cambridge

Jul 2024 – Present

VISITING RESEARCH ASSISTANT

PI: *Dr. Umang Bhatt*

- Designing a longitudinal experiment to evaluate how AI assistance affects skill development, incentives, and promotion dynamics among knowledge-workers.

### Venn Research Group (*Independent*)

Nov 2023 – Present

RESEARCH LEAD

Scientific Advisor: *Dr. Pascal Wallisch*

- Leading interdisciplinary research by utilizing Data Science to study complex social systems and emergent behaviors across various fields.

### New York University



Dec 2023 – May 2024

LEAD QUANTITATIVE RESEARCHER (CO-PI)

Faculty Advisor: *Dr. Gerald McIntyre*

- Built and cleaned a 100-country World Bank panel dataset integrating income, demographic, and unemployment indicators.
- Estimated fixed and random-effects models that isolated demographic drivers of GDP growth and unemployment.

## PUBLICATIONS

- [1] **What NLP says about politics: Longitudinal sentiment analysis of U.S. presidential debates (1960–2024)**  
*Work in progress (Draft PDF)*   
**Hamza Alshamy**, Alexander Pegot-Ogier
- [2] **TimeGraph: A computer vision pipeline for quantifying territorial dynamics from animated historical maps**  
*Work in progress*  
**Hamza Alshamy**, Advay Mirsha, Isaiah Woram, Charlie Xia, Pascal Wallisch
- [3] **Saudi demographic economics: Population aging and drivers of declining fertility rates**  
*King Faisal Center for Research and Islamic Studies, Masarat, June 2025*   
**Hamza Alshamy**

	<p>[4] <b>Demographic economics: The implications and consequences of Japan’s aging population on labor productivity, immigration, and pension funds</b>  <i>Annual Undergraduate Research Conference, NYU, Oral Presentation, May 2024 (Best Social Science Research Award)</i> </p> <p><b>Hamza Alshamy</b>, Anviti Swaraj, Nikko Elyassi</p>																		
TEACHING EXPERIENCE	<p><b>New York University</b>, Graduate Teaching Assistant</p> <p><i>Fall 2025</i>  DS-UA 201: Causal Inference (Instructor: <a href="#">Dr. Sidharth Sah</a>)  DS-GA 1001: Introduction to Data Science (Instructor: <a href="#">Dr. Pascal Wallisch</a>) – Master’s</p> <p><i>Spring 2025</i>  CSCI-UA 473: Fundamentals of Machine Learning (Instructor: <a href="#">Dr. Pascal Wallisch</a>)  DS-UA 112: Principles of Data Science II (Instructor: <a href="#">Dr. Pascal Wallisch</a>)</p>																		
FELLOWSHIPS, FUNDING,& AWARDS	<table border="0"> <tr> <td><b>King Abdullah Full Merit Scholarship – Graduate Studies</b></td> <td>2024 – 2026</td> </tr> <tr> <td><b>Frédéric Bastiat Fellow</b> </td> <td>2024 – 2025</td> </tr> <tr> <td><i>The Mercatus Center at George Mason University</i></td> <td></td> </tr> <tr> <td><b>Best Social Science Research Award</b> </td> <td>2024</td> </tr> <tr> <td><i>50<sup>th</sup> Annual Undergraduate Research Conference, NYU</i></td> <td></td> </tr> <tr> <td><b>NYU Dean’s Undergraduate Research Fund</b> </td> <td>2024</td> </tr> <tr> <td><b>Joseph Schumpeter Fellow</b> </td> <td>2021 – 2022</td> </tr> <tr> <td><i>The Mercatus Center at George Mason University</i></td> <td></td> </tr> <tr> <td><b>King Abdullah Full Merit Scholarship – Undergraduate Studies</b></td> <td>2020 – 2024</td> </tr> </table>	<b>King Abdullah Full Merit Scholarship – Graduate Studies</b>	2024 – 2026	<b>Frédéric Bastiat Fellow</b> 	2024 – 2025	<i>The Mercatus Center at George Mason University</i>		<b>Best Social Science Research Award</b> 	2024	<i>50<sup>th</sup> Annual Undergraduate Research Conference, NYU</i>		<b>NYU Dean’s Undergraduate Research Fund</b> 	2024	<b>Joseph Schumpeter Fellow</b> 	2021 – 2022	<i>The Mercatus Center at George Mason University</i>		<b>King Abdullah Full Merit Scholarship – Undergraduate Studies</b>	2020 – 2024
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SELECT PROJECTS	<p>A more exhaustive list of my projects can be found on <a href="#">GitHub</a>.</p> <p><b>Fine-tuning Transformer-based (BERT) Language Model with Parameter-Efficient Methods</b> </p> <p>Implemented BitFit for efficient deployment of BERT models on sentiment tasks using Hugging Face and Optuna. Reduced trainable parameters by 99.93% (4.4M → 3K) while preserving functional classification performance.</p> <p><b>A Course in Principles of Data Science: Foundations of Statistics and Machine Learning</b> </p> <p>Designed and publicly released a <i>14-lecture slide series</i> to support data science education. Covered probability, inference, regression, hypothesis testing, and machine learning to aid students across disciplines.</p>																		
TECHNICAL SKILLS	<ul style="list-style-type: none"> <li>• <b>Programming Languages:</b> Python, R, SQL</li> <li>• <b>Tools &amp; Frameworks:</b> Git, Hadoop, Spark</li> <li>• <b>ML/DL Libraries:</b> TensorFlow, PyTorch, SciKit-learn, Hugging Face</li> <li>• <b>Applied Skills:</b> NLP, Social Media Analysis, Clustering, Probabilistic Modeling, Visualization</li> </ul>																		
SELECT COURSEWORK	<p>Machine Learning (<a href="#">Kyunghyun Cho</a>); Natural Language Understanding (<a href="#">Tal Linzen</a>); Probability and Statistics for Data Science (<a href="#">Carlos Fernández-Granda</a>); Development Economics (<a href="#">William Easterly</a>); History of Economic Thought (<a href="#">Mario Rizzo</a>)</p>																		