

# Mirza Nayeem Ahmed

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## SUMMARY

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Bridging data and social science to explore how technology shapes governance, policy, and inequality. Experienced in translating research into actionable insights to support evidence-based decision-making. Research interests include public opinion, behavior change, civic engagement, participatory HCI, and ICT for development.

## RESEARCH

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### Microsoft Research

Jun 2024 – Jul 2025

Pre-Doctoral Researcher | *Computational Social Science Lab*

*Supervised by Dr. David Rothschild, Dr. Jake Hofman, Dr. Dan Goldstein*

#### Modeling Public Political Perception Through Sociodemographic Lenses

- Advanced a multi-paper research series exploring demographics, identity, and public opinion, contributing to study design, discussions, and manuscript preparation.
- Developed Python pipelines and data visualizations to process large-scale survey datasets, revealing significant patterns in public opinion.
- Applied clustering algorithms and exploratory models to segment populations and identify emerging sociopolitical trends.

#### Experimental Analysis of Narrative Framing in News Media

- Led participant recruitment and live deployment of a media narrative study on Prolific, designing advanced JavaScript-based Qualtrics surveys to collect high-quality, reliable response data.

#### AI-Augmented Decision-Making in Online Prediction Markets

- Designed and applied predictive modeling and post-stratification methods to enhance demographic segmentation and improve the accuracy of 2024 U.S. Presidential Election forecasts.
- Benchmarked LLM performance for decision support in prediction markets (Polymarket, Kalshi), creating evaluation criteria to guide future research and tool development.
- Engineered a lightweight front-end interface and secure database integration to support experimental evaluation of decision-making workflows.

#### Longitudinal Study of AI Integration in Workplace Collaboration

- Leading a randomized controlled trial with sales and advertising teams to measure the long-term effects of AI-powered tools on productivity, KPI attainment, and workflow efficiency.
- Analyzing digital telemetry to track changes in collaboration patterns, tool adoption rates, and organizational knowledge-sharing behaviors over time.

### University of South Florida

Nov 2023 – Jun 2024

Research Associate | *Computational Social Science and AI Lab*

*Supervised by Dr. Raiyan Abdul Baten*

#### Modeling Creativity in Socio-Cognitive Systems

- Reviewed literature in psychology and cognitive science to uncover gaps in research on creativity, idea generation, and information processing, shaping hypotheses and guiding model development.
- Developed agent-based simulation models to analyze social, semantic, and temporal networks, exploring the influence of social interactions on belief rigidity and creativity within socio-cognitive systems.
- Engineered Python-based computational frameworks to simulate creative processes in social networks, integrating real-world data for enhanced accuracy and relevance.

## EDUCATION

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**Northeastern University**, Boston, MA

**Bachelor of Science in Data Science**

Sep 2019 – May 2023

*Minor: Entrepreneurship & Design Engineering*

**GPA: 3.66/4.0    Honors: Dean's List, Distinction**

**Relevant Courses:** Natural Language Processing, Web Development, Object-Oriented Design, Discrete Structures, Network Science, Biostatistics, Database Design, Machine Learning, Human-Computer Interaction

## WORK EXPERIENCE

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**ANIQUE (Remote)**

Oct 2023 - Apr 2024

**Data Consultant**

- Led R&D initiatives to develop and implement an advanced, scalable data architecture for a dynamic e-commerce product catalog, ensuring secure and reliable cloud-based database operations
- Established strategic partnerships with external companies to acquire valuable data sources, facilitating data enrichment for informed business decisions
- Implemented AI algorithms for product attribution, search, and filtering to enhance UX and increase customer engagement

**Condé Nast (New York, NY)**

Jun 2022 - Aug 2022

**Data Analyst**

- Built scalable ETL pipelines that support consumer events of the 16+ brands such as Vogue, GQ, WIRED, and The New Yorker for 2M+ customers using Apache Spark, Airflow, S3, and Databricks Delta Tables; enabling real-time data processing, providing visibility into critical metrics, and reducing data latency by 15%
- Applied scripting expertise to securely transfer sensitive information (database credentials, tokens, passwords, certificates, and API keys) to support vendor migration, enhancing data security and mitigating unauthorized access risks
- Leveraged Terraform to automate the provisioning and management of Condé Nast's global data platform, reducing infrastructure deployment time by 20% and providing a robust foundation for data processing and analytics
- Researched and developed a proof of concept for an in-house analytics tool to monitor social media engagement, securing buy-in from senior management (CTO, VP of Marketing, and SVP of Audience Development)

**McKinsey & Company (Boston, MA)**

Jul 2021 - Dec 2021

**Data Engineer**

- Developed and implemented an automated recovery processing system in Domo to validate data, analyze usage, and calculate monthly chargeback for 15+ services, reducing manual steps and saving over 50% in ETL time
- Created and deployed a consolidated report visualizer for the finance and operation teams, centralizing critical data, providing real-time updates and ensuring data security and privacy compliance for over 200 employees
- Implemented AI-driven capabilities and leveraged external data sources to optimize a knowledge-aggregation tool for the Client Capabilities Hub, resulting in a 35% reduction in business analysts' information access time while ensuring data synchronization, CI/CD, and facilitating swift diagnosis and resolution

## TEACHING EXPERIENCE

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### Microsoft Data Science Summer School 2025

#### *Primary Instructor*

- Led instruction in data science for students from underrepresented backgrounds exploring research pathways, with an emphasis on reproducible methods, hands-on learning in R, and real-world data acquisition, cleaning, and analysis.
- Developed and taught modules on supervised and unsupervised learning, highlighting model evaluation, optimization, and practical applications such as recommendation systems and forecasting.
- Mentored students in designing and executing research projects, connecting foundational concepts in statistics and machine learning to real-world questions through transparent, replicable workflows.

### Northeastern University

#### *Teaching Assistant*

- **Courses Assisted:** CS3200 Database Design, GE1110 Engineering Design, GE2500 Design Analysis, DS2000 Programming with Data, DS4300 Large-Scale Information Storage and Retrieval.
- Delivered over 400 hours of office hours, supporting 700+ students with assignments, projects, and technical concepts across diverse courses.
- Created grading rubrics and evaluated 1,000+ quizzes and assignments, ensuring consistency and transparency in assessments.

## RELEVANT PROJECT

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### Prison Book Program Data Visualization

*Python (seaborn, altair, bokeh), Tableau, Javascript (d3), MongoDB*

- Designed and implemented complex data visualizations to provide insights into various aspects of the non-profit organization, including prison restrictions, donation patterns, and volunteer activities
- Collaborated with the board of directors to identify operational inefficiencies within the program and streamline the book collection and delivery process
- Automated data cleaning and validation processes for diverse and unstructured data sets, ensuring sustainable project performance with minimal need for future intervention

## SKILLS

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Data Science & Analytics	Python, R, Scala, Domo, Altair, Tableau
Experimentation & Surveys	Qualtrics, Prolific
Network Science	NetworkX, NetLogo
Technical Writing	L <sup>A</sup> T <sub>E</sub> X
Project Management	JIRA, Confluence
Web Development	Figma, HTML, CSS, Java, Javascript, Typescript
Databases	MySQL, Oracle SQL, MongoDB, Redis, Neo4j
Data Engineering	Apache Spark, Airflow, dbt, Databricks, Snowflake, Alteryx
Embedded Systems	Arduino, MATLAB
Engineering Design	AutoCAD, Solidworks

## LANGUAGES

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English	fluent
Bengali	bilingual proficiency
Hindi	limited working proficiency

## REFERENCES

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### **Dr. David Rothschild**

Senior Principal Researcher, Computational  
Social Science Lab  
Microsoft Research  
[davidmr@microsoft.com](mailto:davidmr@microsoft.com)

### **Dr. John Rachlin**

Associate Teaching Professor, Khoury College  
of Computer Sciences  
Northeastern University  
[j.rachlin@northeastern.edu](mailto:j.rachlin@northeastern.edu)

### **Dr. Raiyan Abdul Baten**

Assistant Professor, College of Engineering  
University of South Florida  
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