Arshia Arya

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Education

University of California, San Diego **Aug. 2023 – Present**
*Doctor of Philosophy in **Computer Science*** *La Jolla, California*

BITS Pilani, Goa Campus **Aug. 2016 – June 2021**
*Bachelor of Engineering in **Computer Science** and Masters of Science in **Economics*** *Goa, India*

Experience

Microsoft Research **August 2021 – July 2023**
Research Fellow *Bangalore, India*

- Designed and developed an in house news curation recommender system, Vivaran, for Microsoft employees for knowledge sharing and hybrid interactions using Azure ML pipelines integrating it with Microsoft Teams.
- Incorporated scripts using Python and PowerShell for daily deployment, and implemented scripts for logging interaction data.
- Developed the UX interface for HyWay, a Hybrid meeting technology patented in house within Microsoft.

Microsoft Research **Aug 2020 – July 2021**
Research Intern *Bangalore, India*

- Developed an evaluation method, which got integrated in PyWhy, for **causal inference** estimators, called the dummy outcome refuters, by generating counterfactual outcomes and evaluated on synthetic data.
- Analysed data from large scale Twitter databases using Natural Language Processing methods to study political activity of businesspersons, defence people etc.
- Implemented a causal inference algorithm to study the activity of nodes in social networks of propangada containing tweets, to measure the causal impact of nodes

Projects

Gen AI powered Fact checking system | *Python, Selenium, Large language models, guidance* **January 2024**

- Developed an end to end fact checking system which leverages LLMs to detect claims, generate queries from claims, and verfies claims from retrieved evidence through LLMs
- Engineered prompts using techniques such as Chain of Thought, self consistency etc. and benchmarked it on models such as GPT4, Claude Opus, Mixtral8x7B, Llama2
- Achieved SOTA on the tasks and evaluated the system with human fact checkers

Auditing system for YouTube recommendations | *Python, Selenium, Transformers* **January 2024**

- Implemented Selenium to create an instance of Chrome in order to interact with the correct elements of the web page.
- Conducted experiments with a Yoked Experimental Design to compare recommendations in YouTube Shorts and YouTube longform for studying radicalization pipelines

References

[1] Li, Tony and Arya, Arshia and Jin, Haojian(2024). *Redesigning Privacy with User Feedback: The Case of Zoom Attendee Attention Tracking*. In Proceedings of CHI'24 Proceedings of the 2024 CHI Conference on Human Factors in Computing Systems

[2] Dash, Saloni and Arya, Arshia and Kaur, Sukhnidh and Pal, Joyojeet (2022). *Narrative Building in Propaganda Networks on Indian Twitter*. In Proceedings of the 14th ACM Web Science Conference 2022 (WebSci '22), Association for Computing Machinery, New York, NY, USA, pp. 239–244. https://doi.org/10.1145/3501247.3531581

[3] Arya, A.et.al. (2022). *DISMISS: Database of Indian Social Media Influencers on Twitter*. Proceedings of the International AAAI Conference on Web and Social Media, 16(1), 1201-1207. https://doi.org/10.1609/icwsm.v16i1.19370

Technical Skills

Languages: Python, JavaScript, SQL, R, C++
Data Science skills: Do Calculus, Causal Inference methods, Experimental Design, Quantitative analysis, Machine Learning, Recommender Systems

Relevant Coursework

- Machine Learning
- Statistical NLP
- Algorithms Analysis
- Database Management
- Advanced Software Engineering
- Applied Econometrics
- Data Mining
- Social Computing

Leadership and Awards

- Co-Founder at **Attuna**: Building optmised prompts and open sourced task specific endpoints for production level ML tasks to aid Software engineers
- Co- Founded **BITS Goa Women in Tech**, an organization for women for professional growth and networking
- Institute Merit Scholar for 6 consecutive semesters, awarded to top 6% of the cohort of 700 people