

Anuja Tayal

✉: atayal4@uic.edu 📞: (612) 446-8336 [Github](#) [Medium](#) [Website](#)

EDUCATION

University of Illinois, Chicago, United States

Aug 21 - Present

PhD in Computer Science

- **Advisor:** Dr. Barbara Di Eugenio
- **CGPA:** 4.0 / 4.0
- **Relevant Courses:** Natural Language Processing, Algorithms, HealthCare/Biomedical NLP, Causal Inference, Graph ML

The LNM Institute of Information Technology, India

Aug 11 - May 15

Bachelor in Computer Science

PROJECTS

Medical Text Simplification

- Simplified jargon heavy medical documents to be more comprehensible by patients
- To measure difficulty of medical text, different Readability Measures were explored
- BART was used to generate simplified sentence by implementing custom loss function

Document Grounded Dialog Agent

- Constructed a dialog agent grounded on a government document (dmv) to provide information to the customers
- Built a retrieval model to retrieve the most relevant context from all the contexts given the query
- Modeled the task of generating the response of the agent as a question-answering task.

RESEARCH AND INDUSTRIAL EXPERIENCE

R&D Data Scientist Intern in NLP - PhD, P&G

Jun 23 - Aug 23

- Used Dynamic Shot Prompting in ChatGPT to create Suggestion Question Generator
- Address the challenge of formulating suggestion questions in low-resource settings taking the help of retrieval augmented system

Research Assistant, UIC

May 22 - Present

- Test out the influence of race on ChatGPT's generated content
- Use NeuroSymbolic approaches to design End-to-End Task Oriented Dialog System for heart failure patients
- Model different domains that guide heart failure patients from minority communities to take better care of themselves.
- Model Bachelor degree attainment to explore bias in educational data
- Assess the utility of bias-mitigation techniques to address fairness
- Show that models produce unfair outcomes across various notions of fairness.
- Bias Mitigation techniques fails to improve fairness across subgroups.

ML Engineer at Intain, India

Aug 19 - July 21

- Worked on extracting relevant information from diverse, unstructured documents.
- Designed and implemented automated deep learning language models to extract key attributes.
- Pipeline built can work with limited labelled and incomplete/noisy documents.
- Developed a deep learning model to verify customer signature.
- Built and Deployed the models on Flask web-app
- Designed a Deep Learning model to predict credit risk using financial documents (PnL, Balance Sheet, etc)

- Any unchecked failure/congestion in Computer Networks can bring whole network down.
- Considered the problem of selecting probes to identify faults in computer networks that adapt to traffic dynamics
- Modeled traffic behavior and Detected Malware using flow analysis techniques
- Profiled communication pattern of normal and malicious users by formulating graph based machine learning problem to infer the malicious flows of botnet communications which exhibit uniform behavior otherwise.

Software Developer, R&D Department, AMDOCS, Pune

June 15 - June 16

- Designed and implemented back-end infrastructure to analyze real time network logs and differentiate real user from malicious user and wrote Python Rest API for accessing network logs.
- Developed and assisted with new projects focusing on expanding the breadth and depth of new technologies.

PUBLICATIONS

Devika Salunke, **Anuja Tayal**, Barbara Di Eugenio, Paula G Allen-Meares, Carolyn A Dickens, Olga Garcia-Bedoya, Eulalia P Abril, Andrew D Boyd, Assessing Bias In ChatGPT's simulated clinical responses In Mitigating AI Risk through Ethical Data Science workshop, AMIA ([Accepted Oct 2023](#))

Denisa Gandara, Hadis Anahideh, Matthew Ison & **Anuja Tayal**, Inside the Black Box: Detecting and Mitigating Algorithmic Bias across Racialized Groups in College Student-Success Prediction. In Education Researcher ([Submitted Nov 2022](#))

Anuja Tayal, Neha Sharma, Neminath Hubballi & Maitreya Natu. Traffic Dynamics- Aware Probe Selection for Fault Detection in Networks. In Journal of Network and Systems Management (2020) [\[Paper\]](#)

Anuja Tayal, Neminath Hubballi, Maitreya Natu & Vaishali Sadaphal. Congestion-Aware Probe Selection for Fault Detection in Networks. In 10th International Conference on Communications Systems and Networks (COMSNETS 2018), Bangalore, India. [\[Paper\]](#)

Anuja Tayal, Neminath Hubballi, & Nikhil Tripathi. Communication Recurrence and Similarity Detection in Network Flows. IEEE Advanced Networks and Telecommunications System (IEEE ANTS 2017) [\[Paper\]](#)

TECHNICAL SKILLS

- **Scripting/ML frameworks:** PyTorch, Tensorflow, Keras, NLTK, Spacy, HuggingFace
- **Programming:** Python, R, C/C++
- **Misc:** \LaTeX , Docker, Flask, MongoDB, Nginx, Git, Unix

ACHIEVEMENTS

- Virtual Volunteer at EMNLP'22
- **Teaching Assistant- Program Design-II, Languages and Automata Aug 21-May 22**
- Coordinated Computer Algorithms lab comprising of 50 students guiding students to solve complex problems
- **Teaching Assistant- Computer Organization and Architecture(COA) Aug-Dec 10**
- Mentored and resolved student's query in the Computer Lab on various concepts