

Anuja Tayal

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EDUCATION

University of Illinois, Chicago, United States
PhD in Computer Science

Aug 21 - Present

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

The LNM Institute of Information Technology, India
Bachelor in Computer Science

Aug 11 - May 15

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

Research Assistant, UIC

May 22- Present

- 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.
- Resulted in Publication
- Design End-to-End Task Oriented Dialog System for heart failure patients

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)

Researcher, Indian Institute of Technology (IIT), Indore

July 16 - Aug 18

Mentors: [Dr. Neminath Hubballi](#), [Dr. Maitreya Natu](#)

- 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.

- 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

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:** L^AT_EX, 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