Akshay Channesh

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EDUCATION

University of Illinois Chicago, Chicago, Illinois 60607
- MS in Computer Science 2021– 2023

Shiv Nadar University, Uttar Pradesh, India 201314
- B.Tech in Computer Science and Engineering 2015– 2019
  - With a Minor in Economics

SKILLS

Python, C, C++, Java (Rusty), SQL, HTML/CSS, AWS, Shell Scripting(BASH), NumPy, PyTorch, PyTorch-Geometric, Verilog (Rusty), LaTeX, Inkscape, Darktable.

PUBLICATIONS

Chirag P. Chhablani, Sarthak Jain, **Akshay Channesh**, Ian A. Kash, Sourav Medya, *"Game-theoretic Counterfactual Explanation for Graph Neural Networks"*, The Web Conference (WWW), 2024

RESEARCH AND WORK EXPERIENCE

Research Assistant at UIC under Prof. Sourav Medya Jun 2023– Ongoing
- My work is on explainable AI. We are using game theoretic methods for generating explanations on Graph Neural Netowrks (GNNs). [Python, PyTorch]

Intern at Indian Institute of Science (IISc) under Prof. Y. Narahari Jan 2019– Jan 2020
- I worked on designing algorithms for procurement auctions. I wrote my UG dissertation titled *Mechanisms with Learning: Thompson Sampling based Mechanisms for Sleeping Multi-Armed Bandit Problems*, and continued the work after graduation. It involved characterizing the various Game Theoretic Properties of the learning mechanisms used in auctions, and to provide analytical proofs of robustness. [Python]

Intern at Indian Space Research Organisation(ISRO) Jul– Aug 2017
- I worked under Mr. K. R. Muralidhara on a project titled *Design and Implementation of a Test Automation System to Test the Micro Star Tracker Video Processing Unit*. This is a sensor which captures star images and computes the spacecraft attitude(orientation) based on star positions. My project was on building a Test Automation System to test and evaluate its behaviour. [C++, Ada, C, Qt]

PROJECTS AND SEMINARS

Achieving Fine Grained Control over Incidence of False-positives and False-negatives in NLP Classification Tasks (Machine Learning and AI) Apr 2022
- In this work I designed a classifier agnostic meta-algorithm called FGC-Classify that wraps around any existing classifier and allows you to control the incidence of False Positives and False Negatives. Evaluate this using Naive Bayes classifier and a Spam text message dataset. (Code here: https://github.com/AkshayChn/cs521/blob/main/Classifier.ipynb)

Exploration and Fairness in Infinite Armed Bandit Problems (Machine Learning and AI) May 2022
- This work looks at the Infinite Armed Bandit setting and the exploration-exploitation tradeoff within this context. We propose a method called Surplus weighted Curiosity which defines how agents must explore the unseen arms. We also conduct an empirical study and evaluate eight different agents in three environments. We observe that our method Surplus weighted Curiosity performs well. (Code here: https://github.com/AkshayChn/modern-rl)

Assembly Interpreter in C++ (Systems Programming) Jan 2023
- This is a Assembly Language Interpreter (ALI) for a Simple Assembly Language (SAL). A RISC style instruction set of eleven instructions. It was implemented in C++. *Code at https://github.com/AkshayChn/assembly-language-interpreter*

Virtual Reality Unity Game for Occulus (Meta) Quest Nov 2021
- Designed a Unity game where the player can change sizes and interact with objects around a room. (Page here: https://akych.com/cs428/project3.html)

Augmented Reality Android App Oct 2021
- Used Unity and Vuforia to make an app that turns paper cubes into interactive knickknacks. These were designed to mimic souvenirs from various exotic places.(Page here: https://akych.com/cs428/)

Computing Equilibria in Finite N–Player Strategic Form Games (Machine Learning and AI) Jul 2018
- This was done at the start of my internship at IISc. This program is written in Python 2.7. It takes in any finite strategic game computes various maxmin valies and equilibria such as the Nash equilibrium, dominant strategy equilibria etc..

***Evaluate* E-commerce website – Role: Product Owner** May 2018
- I led a nine member scrum team in designing a platform for startups to launch their products while getting accurate pricing data. We used a sealed bid second price Vickrey Auction mechanism to elicit true evaluations of products from buyers.
- I proposed the idea and refined it with inputs from the team. I was also critical in testing the auction logic and the system's backend. I deployed the system on AWS(ec2 + rds). I designed scripts to handle continuous integration and to monitor server status. The fontend used Bootstrap libraries and Vue framework. *Code here: github.com/clintjohnsn/Evaluate*