Snigdha Ghosh Dastidar

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EDUCATION

University of Illinois at Chicago (UIC), Chicago, IL   May 2025 (Anticipated)
Master of Science in Computer Science | GPA: 4.00/4.00

University of Illinois at Chicago (UIC), Chicago, IL   May 2023
Bachelor of Science in Computer Science, Minor in Mathematics | GPA: 3.88/4.00   Magna Cum Laude

Relevant Coursework: Data Mining and Text Mining, Topics in Applied Cryptography, Programming Language Design, Database Systems, Principles of Concurrent Programming, Data Science, Natural Language Processing, Algorithms, System Programming, Object-Oriented Languages and Environment, Languages and Automata, Machine Organization, Statistical Techniques for Machine Learning and Big Data, Unix Terminal Bootcamp.

SKILLS

Programming: Python, C++, C, Java, F#, OCaml, Dart, R, SQL, PHP, MATLAB, Go, Processing.
Technologies: Flutter, Android, Java Reflection, Restful APIs, Jupyter, Junit, Maven, Git, jQuery, HTML/CSS, LaTeX, Android Studio, Anaconda, Visual Studio, Docker, Arduino, Linux.

EXPERIENCES

CS Department, UIC   August 2021 – Present
Teaching Assistant
Courses: Framework-based Software Development (Present) | Systems Programming | Software Design | Data Structures
- Hold office hours for class with more than 200 students to address their individual queries regarding class topics.
- Prepare and grade labs, quizzes, projects, and create course tasks to enhance students understanding of the subject.
- Lead interactive lab sessions, write **script for testing** procedures, and give guidance on their work.
- Interview students for oral exams and provide constructive feedback to help improve their academic performance.

AbbVie   January 2023 – May 2023
Tech In Residence Program
- Created a **React Native app** prototype that generates a personalized learning map for the user to upskill their current skills.
- Represented features on interface design platforms such as **Figma** and **Mural** to visualize the application's utilization.
- Analyzed research findings through journey mapping, **stakeholder mapping**, and developed concepts using **gamification** and ML-based skill assessment tests to build the solution design.
- Consulted AbbVie on how to identify new critical skills and motivate employees to foster a culture of development.

Caterpillar Inc. Lab   June 2022 – May 2023
Researcher
- Illustrated the flow of the **data chain** from the machine to end applications by interviewing more than 30 company employees, investigating areas of data breakdowns, and standardizing company-wide troubleshooting methods.
- Utilized **human-centered research** approach to analyze the company's inner workings and comprehend their **cloud database**, network architecture, and existing technologies.
- Ideated an automated diagnostic system using **decision trees**, **binary search algorithm** and a **supervised machine learning model** (classification) to help troubleshoot the breakdowns and inspect solution for the unexplored areas.
- Worked in a **multi-disciplinary team** using agile scrum methodologies and effectively communicated technical concepts to non-technical members.

PROJECTS

Signal Protocol Chat Application (React.js) - GitHub   May 2024
- Developed an **end-to-end encrypted** messaging web application using the Signal Protocol ensuring confidentiality.
- Implemented **X3DH** for initial key exchange and **Double Ratcheting** algorithm for **forward secrecy** and encryption.
- Built a user-friendly app leveraging **WebSocket** for real-time communication and **MySQL** for secure data storage.
- Secured message exchange with integrity through a **relay server** managing key distribution and state synchronization.

World Freedom Analysis Report (Python, Jupyter Notebook) - GitHub   May 2022
- Performed **exploratory data analysis** on various factors that affect the freedom and development status of a country.
- Trained and compared different **classification ML models** to **predict** which countries are heading to "not-free" status.
- Applied **SVM** model to predict whether a country is an electoral democratic based on factors such as political rights, civil liberties, and freedom of expression.
- Predicted the freedom status of countries using SVM model with **Linear Kernel** by plotting them on a map.