

# Pranta Nir Barua

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## EDUCATION

### Michigan State University

*Bachelor of Science in Computer Science, Minor in Business*

East Lansing, MI

Aug. 2021 – May 2025

### Michigan State University

*Bachelor of Science in Data Science*

East Lansing, MI

Aug. 2021 – May 2025

## EXPERIENCE

### C++ & Python Instructor (Game Coding & AI/ML)

June 2025 – Present

*iD Tech Academy at Stanford University*

*Stanford, CA*

- Designed and taught structured lesson plans in C++ (Raylib) and Python (AI/ML), emphasizing SWE principles like modular design, debugging, and iterative testing, ensuring students built solid engineering foundations
- Led and mentored a diverse team of teenagers by fostering a collaborative, hands-on environment where students tackled coding challenges, practiced peer code reviews, and developed problem-solving resilience.

### Full Stack App Developer

May 2023 – May 2025

*Michigan State University*

*East Lansing, MI*

- Developed and launched a mobile app on iOS and Android using React.js, Node.js, and Firebase to create a points-based check-in system and resource hub, increasing student engagement by 40% for over 11,000 users
- Integrated MSU's Okta single sign-on by exchanging auth tokens and enforced Firestore security rules to ensure restricted access and minimum privilege, resulting in zero security breaches.
- Organized and facilitated orientation events by coordinating with university departments to support new students, leading to a 90% positive feedback rate

### Teaching Assistant

September 2022 - May 2024

*Michigan State University*

*East Lansing, MI*

- Led weekly lab sessions and help rooms for 50 students, teaching Python fundamentals and debugging techniques through hands-on coding exercises, improving student performance and lab scores
- Collaborated in weekly team meetings with colleagues and professors to share best practices and strategize curriculum enhancements, leading to more effective student engagement and learning

### Professorial Assistant in Research

September 2021 - September 2022

*Michigan State University*

*East Lansing, MI*

- Developed a web-based system using HTML, CSS, and JavaScript to display and compare hurricane predictions from the National Hurricane Center and machine learning models, improving forecast visualization and analysis

## PROJECTS

### Agentic Collaborator | Python, Flask, React, PostgreSQL, LangChain

September 2024 - December 2024

- Built an AI-powered email analysis tool for Microsoft Outlook using OpenAI API to automate sentiment analysis and consensus-building, reducing manual review time for employees.
- Designed a web dashboard to visualize AI-generated insights and maintain an audit trail for policy-related emails.
- Built an agentic collaborator system where multiple AI agents coordinated through a dynamic graph-tree architecture to process and synthesize complex policy communications.
- Coordinated with the client Ally Financial to determine product goals and led technical decisions on architecture.

### GraphRoots | Python, Flask, React, Google Cloud SQL

January 2025 – May 2025

- Designed an interactive graph-based visualization tool to analyze relationships between companies and employees.
- Built modular and well-documented algorithms to visualize and automate connections in data providing Grassroots Midwest with reusable tools for relationship analysis and comparison.
- Collaborated with clients in Grassroots Midwest company to define software use cases and requirements through iterative feedback sessions, ensuring alignment with strategic goals and improving final solution quality.

## TECHNICAL SKILLS

**Languages:** Python, C++, C, Java, SQL, JavaScript, HTML/CSS, R

**Frameworks & Backend :** React, Node.js, Flask, LangChain, Material-UI, FastAPI, MongoDB, PostgreSQL

**Developer Tools:** Git, Docker, Firebase, Google Cloud Platform, Azure, VS Code, Okta SSO, Tableau, PowerBI

**Project Management & Collaboration:** Agile, Scrum, CI/CD, Jira, Trello, Microsoft Teams, Zoom