Pranav Rathod

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Education

University of Illinois at Chicago (UIC) Expected: May 2023
Bachelor of Science in Computer Science, Minor in Art GPA: 3.93/4.00
Relevant Coursework: Data Structures, Algorithms, Artificial Intelligence, Data Science, Database Systems, Computer Graphics, AR/VR, Framework-based Development, Systems Programming.

Skills

Programming Languages: Java, C/C++, C#, Python, Dart, SQL, F#, HTML, JavaScript, CSS, Arduino.
Technical*:* Multi-Threading, Locking, TCP/IP, Flutter SDK, APIs, GCP, Firebase, SQLite3, Git, MacOS, Windows, Unix/Linux, Android Studio, Google/JUnit5 Testing Framework, Docker, Unity, Vuforia Engine.

Work Experience

- **Undergraduate Research Assistant,** *Chicago, Il* *June 2022 - Present*
  iMIX Lab @ University of Illinois at Chicago
  - Working on a project to understand multimodal user interactions to train machine learning models.
  - Created an application using Flutter to log user's speech and gesture interactions and correlate them.
  - Conducting user studies to gather varied data of user interactions and log them into CSV files.
  - Leveraging GCP's Speech-to-Text for speech recognition and generating timestamps.
- **Undergraduate Teaching Assistant,** *Chicago, Il* *January 2022 - December 2022*
  UIC Department of Computer Science.
  - Provided effective feedback to students by grading assignments for a Framework-based Dev course.
  - Assisted students in debugging and writing code to build applications using Flutter.
  - Utilized communication platforms to effectively instruct multiple students at once.

Projects

- **Traffic Crash Analysis** *December 2022*
  Python, Pandas, JavaScript
  - Analyzed open source data to understand traffic crashes in and around the city of Chicago.
  - Categorized and observed traffic crashes based on region, vehicle types, time of the year.
  - Drafted an ML model using K-Means clustering and Naive-Bayes to predict types of crashes.
- **C Compiler** *April 2022*
  F#
  - Drafted a system in F# that compiles and executes a C program.
  - Converted C code to a list and parsed using recursive-descend to check for syntax errors.
  - Constructed a symbol table to store identifiers, their data types, and check for type mismatch errors.
- **Chicago Transit Authority (CTA) Data Analysis** *February 2022*
  Python, SQLite3
  - Utilized open-source CTA database to analyze 20 years worth of ridership data.
  - Used Python to accept user requests and make queries to the database through SQLite3.
  - Visualized and compared trends of different CTA lines using the PyPlot library.
- **15 Puzzle** *April 2021*
  Java, javaFX, Eclipse, Maven
  - Built a 15 tile puzzle game using the javaFX library to make the user interface for server and client.
  - Allowed multiple clients to join the same or different server using multi-threading.
  - Implemented an AI A* Heuristics algorithm to assist users in making their next move.

Awards

- **Best in Category** *UIC Engineering Expo, Chicago, Il* *April 2021*
  - Won for the Room Occupancy Counter and Temperature Alarm (ROCTA).
  - Designed an Arduino based device to enforce COVID-19 social distancing using an alarm.
  - Tracked the number of people in an enclosed space, along with the room's temperature.