Kunal Rao

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Highly motivated Year 3 Computer Science student seeking an internship in software development. Proficient in SQL, Python, C, Java, JavaScript, MySQL, Full Stack Mobile and Web Development and Database Development, with a strong foundation in computer science principles. I am eager to apply my skills and knowledge to contribute to a dynamic team and gain practical experience in the field. Looking for an opportunity to learn, grow, and make a meaningful impact in a professional environment.

Education

Bachelors of Science in Computer Science – University of Alberta, Canada (2021-ongoing)

Relevant Coursework

Tangible Computing, Algorithms, Database Management, Search and Planning in AI, Discreet Math, Software Engineering, Machine Learning.

Technical Acumen

- Programming Languages – Python, C, Java, Java Script, Dart, XML
- Database Management – MySQL, SQL, NoSQL, MongoDB
- Web Dev and Mobile Dev – React.js, CSS, Android Studio, Flutter
- Software Development – Object-Oriented Programming, Agile Methodology
- Data Analysis – NumPy, Pandas, Data Visualization

Projects

- **QRiffic** – QRiffic is an Android app designed using Java, Android Studio and Xml to scan QR codes and provide an interactive experience for users. Here are the key features and functionalities of the app:
  - QR Code Scanning: The app enables users to scan QR codes using their device's camera. These QR codes contain points that are determined using a hash function. Upon scanning, the app assigns the user points based on the QR code's hash and generates a unique and random identicon.
  - User Profiles and QRmons: Each user has a profile where they can view their captured QRmons. QRmons are virtual creatures associated with the scanned QR codes. The app records details such as where and how the QRmon was captured, adding a layer of gamification to the experience.
  - Search Users: The app enables users to find and view other players' profiles, discovering their captured QRmons and progress.
  - QRiffic offers an immersive QR code scanning experience, combining virtual creature collection, user profiles, maps integration with Google Maps API, Firebase Storage for data storage and management, and exciting leaderboards.
- **Search and planning AI models** – I have also developed AI models using Python and Numpy specifically designed to solve various games and quizzes. These models utilize advanced algorithms and techniques to provide intelligent solutions. Here are some examples
  - Sudoku Solver: AI model that solves Sudoku puzzles using backtracking and optimization methods.
  - Connect 4 AI: AI model for optimal gameplay using game tree search algorithms like minimax with alpha-beta pruning.
  - Path Finding AI: AI model for finding optimal paths in maze-like environments using search algorithms like A*, Dijkstra's algorithm, or breadth-first search.
- **Valorant Bot** – The Valorant bot is designed using Python, Pillow and SQL to enhance the gaming experience by providing a built-in leaderboard feature. After each game the Valorant bot utilizes AI technology to capture the results from the screen and extract relevant data or stats such as kills, deaths, assists, and headshots. It then calculates rankings based on various criteria like win/loss ratio and total kills. The leaderboard is then stored in a database, and users can connect with their friends to compare their performance. This feature encourages healthy competition and provides a way for players to track their progress over time.