Pranav Rathod

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EDUCATION

University of Southern California   Los Angeles, CA
Master of Science in Computer Science - Multimedia and Creative Technologies   *GPA: 4.00/4.00*
University of Illinois at Chicago   Chicago, IL
Bachelor of Science in Computer Science, Minor in Art   *GPA: 3.92/4.00*

RELEVANT COURSEWORK

Computer Graphics, Augmented/Virtual Reality, 3D Graphics and Rendering, Data Structures, Algorithms, Artificial Intelligence, Data Science, Database Systems, Framework-based Development, Big Data Mining, Software Design, Systems Programming

SKILLS

Languages: C/C++, Java, C#, Python, Dart, Go, SQL, F#, JavaScript
Technical: OpenGL, WebGL, Unity, Vuforia Engine, Blender, Flutter SDK, GCP, Firebase, SQLite3, Multi-Threading, Locking, TCP/IP, Android Studio, Google/JUnit5 Testing Framework, Docker, Git, MacOS, Windows, Unix/Linux,

EXPERIENCE

Media Support Specialist   January 2024 – Present
Annenberg TechOps Information Technology, University of Southern California   *Los Angeles, CA*
- Leveraging web and design expertise and providing coding support to make custom news feed and article pages.
- Answering technical questions and provided assistance with HTML, Adobe Creative Cloud and WordPress.
- Producing screen casts and step-by-step tutorials to aid users in multimedia production.

Research Assistant   June 2022 – December 2023
ELiCIT Lab, University of Illinois at Chicago   *Chicago, IL*
- Delivered Flutter app for speech and gesture interaction studies, utilizing GCP's Speech-to-Text and Facebook's Detectron2.
- Investigated student interactions on PufferTouch display using Unity and C#, studying its impact on collaborative learning.
- Enhanced UI design and experience of the application based on user feedback.
- Explored existing research on creative technologies for children, contributing to a comprehensive literature review.

Teaching Assistant   January 2022 – December 2022
Department of Computer Science, University of Illinois at Chicago   *Chicago, IL*
- Guided students in debugging and writing code in C, C++ and building applications using Flutter, Dart.
- Formulated course logistics and graded assignments for intermediate and advanced Computer Science courses.
- Utilized communication platforms to effectively instruct more than 100 students at once.

PROJECTS

Roller Coaster Simulation | *C++, OpenGL*   March 2024
- Engineered a roller coaster simulation with Catmull-Rom splines in OpenGL, using control points from a custom format file.
- Elevated appearance with rail cross-section rendering and introduced a texture-mapped ground with Phong shading.
- Automated frame capture for animation with an immersive first-person view and realistic camera movement.

Traffic Crash Analysis | *Python, Pandas, JavaScript*   April 2023
- Created an ML model using K-Means clustering and Naive-Bayes to predict types of traffic crashes.
- Analyzed open source data to understand traffic crashes in and around the city of Chicago.
- Visualized and categorized traffic crashes based on region, vehicle types, time of the year using GeoPandas and JavaScript.

Virtual Reality Kiosk | *Unity, C#, Virtual Reality ToolKit (VRTK), Blender*   October 2022
- Developed a Virtual Reality environment showcasing the interior of a proposed college building.
- Allowed users to move and interact with objects by deploying application in a VR headset.
- Built custom 3D models leveraging Blender and mapped custom textures drawn using Procreate.

Shadow Maps | *HTML5, JavaScript, WebGL*   April 2022
- Implemented WebGL shadow mapping for realistic rendering of shadows in urban settings.
- Developed interactive WebGL app with file upload, configurable projection, and lighting controls.
- Optimized performance with framebuffer objects, performed advanced features like percentage closer filtering.

AWARDS

Undergraduate Research Forum | *Chicago, IL*   April 2023
- Achieved 3rd place in the Engineering and Physical Sciences category for presenting NUI-based research.
- Engaged in discussions, answered questions, and welcomed feedback on project methodologies.

Engineering Expo | *Chicago, IL*   April 2021
- Won 'Best in Category' for designing an Arduino-based device to enforce COVID-19 social distancing.
- Tracked the number of people in an enclosed space, along with the room's temperature.