

# Patrick Cheng Software Engineer

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## EDUCATION

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### Carnegie Mellon University (CMU), Pittsburgh PA

Expected May 2024

Master in Entertainment Technology

GPA 3.75

Relevant Courses: Computer Graphics, Building Virtual Worlds

### The Ohio State University (OSU), Columbus OH

May 2022

Bachelor of Science in Computer Science Engineering

GPA 3.5

Relevant Courses: Software Engineering, Game Design & Development, Virtual Reality, Data Structures & Algorithms

Honors: Dean's List - 2018, 2019, 2021, 2022

## TECHNICAL SKILLS

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- **Programming Languages:** Java, C/C++, C#, HTML, JavaScript (node.js, ExpressJS), Python, MATLAB, Scheme, VB.Net
- **Tools:** Unity3D, Unreal 5, GitHub, Jira, MongoDB, Firebase, Perforce, Android Studio, Adobe Creative Suites, TestRail
- **Skills:** Agile development, Game Design, Scrum project management, Version control, Communication, Leadership

## PROFESSIONAL EXPERIENCE

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### Ford Motor Company

Dearborn, MI (Remote)

Software Engineer Internship

May 2022 – Aug 2022

- Worked on automation testing using Python, along with participation in system, unit, regression, functional testing using manual testing methods with Agile Software Development Life Cycle methodology.
- Aligned with the development team to perform automotive infotainment software verification, validation, and diagnostic services on a virtual test bench for Ford Mustang Mach-E and F150 Lightning.
- Experienced in writing and modifying test cases, test plans, executing test scripts using TestRail.

## PROJECTS

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### C.A.V.E.R.N (Cave Automatic Virtual Environment Round) | Platform Development

Jan 2023 – Present

- Coordinated with faculty to develop multiplayer immersive experience with omnidirectional stereo for newly developed C.A.V.E.R.N projection system, featuring a 270-degree circular screen and 20-foot-wide play area.
- Integrated stereoscopic rendering using Unreal Engine for projection of scene environment.
- Demonstrated effective immersion and mixed reality simulation through prototyping development using Unity3D.

### Building Virtual Worlds | VR/AR Game Development

Aug 2022 – Dec 2022

- Completed rapid prototyping course of implementation of 5 immersive projects in 10 weeks using C# in Unity.
- Collaborated as a programmer with artists and sound designers to iteratively design VR/AR games for platforms such as Oculus Quest 2, CAVERN, and Jam-O-Drum. Showcased game at CMU ETC Festival to 600+ attendees.
- Utilized Microsoft Mixed Reality Tool Kit, OpenVR, hand tracking and passthrough to create mixed reality experience.

### Festival Bingo | Web Application Development

Nov 2022 – Dec 2022

- Developed a web application within 10 days for the CMU ETC festival showcase allowing over 600 attendees to track their progress through interactive project experiences using JavaScript, Node.js, and ExpressJS.
- Achieved to manage user data through utilizing MongoDB to create RESTful API.

### Discuss & Meet | Mobile Application Development

Aug 2021 – Dec 2021

- Designed and developed forum-based discussion platform for streamlining academic planning with discussion posts using Java in Android Studio. Used Google Maps API to enable users to schedule in-person meetings.
- Employed Firebase to build a real-time database and incorporate features such as fragments and recycler views.

### Code Interpreter | Software Development

Jan 2021 – May 2021

- Implemented code interpreter tool in Java allowing machines to execute basic math operations from code. The tool was able to read and translate code into an abstract parse tree, reformat the code, and execute the resulting output.
- Utilized Object-Oriented Programming principles to design a modular and efficient solution.

## AWARDS

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### Silver Award, International Silk Road Photography Competition

2019

- Top 1% of over 100,000 participants. Invited to attend award ceremony in Beijing, China.