RUJIA (SISSEL) SUN

New York, NY | 607-697-4664 | rs923@cornell.edu | LinkedIn | GitHub

EDUCATION

Cornell Tech (Cornell University), New York, NY   Expected May 2024
Master of Engineering in Computer Science

Cornell University, Ithaca, NY   May 2023
Bachelor of Science with Honors in Computer Science | GPA: 4.1
Minor: Game Design, Information Science (Interactive Technologies concentration)
Honors/Awards: Tau Beta Pi Scholar for 2022-23; Dean's List for five semesters
Relevant Coursework: Object Oriented Programming, Functional Programming, Data Structures, Analysis of Algorithms, Computer Graphics, Computer Vision, Machine Learning, Game Design, Rapid Prototyping, Human Computer Interaction, Web Applications
Experience: Teaching Assistant for INFO 4320/5321 (Introduction to Rapid Prototyping and Physical Computing) for two semesters

TECHNICAL SKILLS

Coding Languages:	Python, C++, C#, Java, Arduino, HTML, JavaScript, CSS, C, OCaml
Software:	Unity, Adobe (Photoshop, After Effects), Live2D, Autodesk Fusion 360, Miro, LaTeX
Hardware and Prototyping:	3D Printing, Laser Cutting
Languages:	English (fluent), Chinese (native)

EXPERIENCE

SciFi Lab, Cornell University, Undergraduate Research Assistant, (Python, 3D printing, LaTeX), Ithaca, NY   June 2022 - May 2023
- Designed and 3D-printed form factor hardware that is attached to an off-the-shelf glass-frame and a Quest 2 VR headset
- Enhanced the data collection script in Python by implementing video embedment, text animations, and enabling user studies in VR via Quest Link
- Explored how to track activities inside the oral cavity via acoustic sensing using a non-contact nose interface
- Evaluated performance via a user study with 11 participants and achieved 93.7% accuracy in using a ResNet18 CNN model to classify 16 gestures of silent speech, breathing patterns and tongue movements
- Summarized research findings in a 4-page paper as the first author and delivered a conference talk at UbiComp/ISWC 2023

LEAD Lab, ShanghaiTech University, Undergraduate Research Assistant, (C#, Unity), Shanghai, China   May 2021 - Aug 2021
- Built a Unity project in VR using HTC Vive Pro that recorded eye gaze data and converted it into a real-time heatmap
- Customized a shader using Unity's universal render pipeline to display heatmaps on 3D objects with non-overlapping UV maps
- Engineered a CSV-based gaze data export and heatmap reconstruction system, enhancing user activity analysis and project versatility

PROJECTS

AnimeMoji, (Python, Stable Diffusion, MediaPipe, Gradio, Adobe After Effects, Miro)   Spring 2023
An application that uses Stable Diffusion and face mapping to generate personalized animated emojis in anime style
- Combined Stable Diffusion with customized face mapping logic for generating animated emojis from text and human face videos
- Implemented a user-friendly Gradio front end that is paired with Stable Diffusion API, simplifying the creation of customized emojis
- Created a research video which provided a detailed overview of project pipeline, discussed implications and future work

Stregheria, (C++, Adobe Photoshop, Live2D, Tiled, JavaScript)   Spring 2023
A hack-and-slash game on Android and iOS that utilizes combinations of gestures as spells to defeat waves of enemies
- Adopted Model-View-Controller pattern in a team of 10 members to maintain a well-structured codebase that facilitates collaboration
- Utilized graphical level design by using Tiled (a map editor) and parsed JavaScript files that are exported as levels in game
- Designed captivating animations for 2 enemy types using Live2D, including 1 flying and 1 quadrupled

Procedural World with VR Integration, (C#, Unity, ProBuilder)   Fall 2022
A third-person game with a procedural world, custom shaders and a slider that controls the liveliness of the environment
- Generated game terrain procedurally with Perlin noise and customized shaders for water and clouds using Unity Shader Graph
- Developed a real-time slider for dynamic control of terrain color, water level, plant scale and cloud thickness to improve interactivity

Easy Garden, (JavaScript, HTML, CSS, Vue.js, Miro)   Fall 2022
A high-fidelity progressive web application prototype where gardeners can choose suitable seeds and provide reviews
- Crafted a plant catalog page with searching, sorting and filtering features based on plant type, variety, size, taste and gardener level
- Constructed a persona with 6 scenarios based on 8 contextual interviews and iterated design 4 times based on low-fidelity prototypes

Disco Dale, (Java, LibGDX)   Spring 2022
A platform-stealth game on desktop with color-changing and grappling as core mechanics
- Applied A* search algorithm for enemy pathfinding and included multiple enemy behaviors in AI controller using finite state machines
- Implemented the main menu, pause, options and level select screen as UI for the game