+1 352 610 2008
jacyscharlow.github.io
New York, United States
jacyscharlow@gmail.com

Jacy Scharlow

Software Developer

As a highly motivated computer science master's student, I am seeking a challenging and rewarding career in a dynamic and technology-focused environment where I can apply my expertise in object-oriented programming languages like C++ including my experience working collaboratively with diverse teams.

EDUCATION

Rensselaer Polytechnic Institute (RPI) | Troy, New York | August 2018 – May 2023

- **Master of Science** in Computer Science (Year: 2023)
- **Bachelor of Science** in Computer Science / Games and Simulation Arts and Sciences (Year: 2022)

EXPERIENCE

Student Software Engineer | Trojan Duck Games | January 2021 – June – 2021

- Debugged and optimized other programmer's code, which were exchange through git.
- Implemented levels and UI, from developer notes, with the Unity Engine using C#.
- Collaborated remotely with an international team which required being accountable with team dialog.
- Attended regular meetings that briefed the team on condition of everyone's assignments.

— **Takeaway**: This helped me learn how to collaborate effectively with remote teams, optimize code, and implement game features efficiently.

RESEARCH

Maya Wrinkling Plugin (Master's Project) | January 2022 – Present

- Constructed data structures that handled geometric information for future application of linear algebraic functions that generate wrinkles.
- Interpreted the Maya API and its documentation to properly integrate a custom deformer using C++.
- Modeled test geometry, which was used to quantify the robustness of the software.
- Devised a productive project pipeline which focused on well charted milestones.
- Amplified project interest through generating videos and illustrations to demonstrate achievements.
- Wrote documentation and presented the project to superiors and peers.

— **Takeaway**: I honed my project management, communication, problem-solving, and analytical thinking skills through interpreting API documentation, constructing efficient data structures, and presenting my findings to peers.

Glass Rendering | January 2020 - April 2022

- Developed algorithms that used C++, OpenGL, and CMake, to explore glass rendering techniques.
- Simulated ways of light reflection, refraction, and diffusion, including resulting caustics and color transmission.
- Compiled testing environments that visualized each of the effects to assess quality of the application.
- Utilized prior research, documentation, and careful derivations of linear algebra formulas.
- Wrote a paper that effectively documented techniques and mathematical processes, and presented the project to peers.

— **Takeaway**: I developed and utilized algorithms, researched prior work to inform my own, visualized and assessed the quality of my work, document my techniques and present my findings to my peers.

PROJECTS

3D-Game (UE5-Project) | June 2020 – Present

- Designed an indie game that is focused on npc narrative and customizable play style.
- Overhaled the typical idea of a cozy game, through market research.
- Standardized ways of integrating art and technology to work together in an intuitive way.
- Explored functionality in the updated Unreal Engine 5, to diversify the approach of certain mechanics.
- Tracked development through rigid documentation and creation of developer logs.

— Takeaway: I improved skills in creative design and market research, while also improving my ability to integrate art and technology and track progress through careful documentation.

Data Mining Social Media | August 2022 – January 2022

- Prototyped a deep neural network that assess the quality of social media posts using Pytorch.
- Programmed an algorithm to take in metadata and categorize content based on specified parameters that quantified the idea of 'quality'.
- Scraped information from social media to develop an evolving dataset.
- Analyzed and Interpreted results to determine viability of the network.

— Takeaway: I acquired valuable skills in prototyping deep neural networks, programming algorithms to categorize content, scrape data, and analyze output.

Graphics Software | January 2020 - April 2022

- Developed a general graphics software using C++, OpenGL, and CMake.
- Used the software and documentation to create a software to demo static graphical techniques.
- Implemented a half-edge data structure, shaders, ray tracing, photon mapping, and anti-aliasing.

— Takeaway: I strengthened my understanding of graphic rendering techniques and developed problem-solving and project management skills.

Wiltune (UE4-Project) | January 2020 - May 2020

- Worked on award winning Unreal game, Wiltune, as a part of my Undergrad Curriculum.
- Utilized blueprints to design behavior trees for the enemy AI, submitting the contribution through perforce version control.
- Tested the AI with routine in level playtesting and specifically constructed environments.
- Participated in a multi-disciplined group, that focused on self-accountability regarding production.
- Won the Artistic and Audience Choice Awards at GameFest 2020.

— Takeaway: Through working collaboratively on a team that emphasized cross-functional collaboration and individual responsibility for project success, I gained valuable experience in creating AI behavior trees using blueprints and conducting routine playtesting.

Web Scraping Ingredients | January 2019 - August 2020

- Scraped information from online retailers of personal care products using Python.
- Developed a scripted that cross referenced reviews and ingredients from parsed data.
- Found correlated evidence of reviews and ingredient, cross referenced to product type.

— Takeaway: I honed my data analysis and problem-solving skills while working independently and efficiently with Python to scrape and analyze personal care product data, identifying patterns and correlations in complex data sets.

ACHIEVEMENTS AND LEADERSHIP

Member of The National Society of Leadership and Success (NSLS) | March 2019 – 2022

- Attended leadership training and certification with other members of the chapter.

Achievements: Rensselaer Leadership Award, Hoby Leadership Award, The Dean's Honor List, 4x Track & Field All American, RPI Olympia Freshman Athlete of the Year

SOFTWARE, SKILLS, AND OTHER

Software/OS: Windows, MacOS, Linux, Git, Adobe Creative Cloud, Microsoft Office, Excel, Unity Engine, Unreal Engine, MySQL, JIRA, Maya, Blender, Pytorch, Substance Painter

Programming Languages: C++, C, C#, Python, Java, JavaScript, SQL, CSS*, HTML*, Assembly Languages

Skills and Knowledge: Data Structures, Algorithms, Machine Learning, Binary Exploitation, Artificial Intelligence, Databases, Computer Graphics, Computational Geometry, Game Development, Calculus, Multi-Variable Calculus, Linear Algebra, Binary

Organizations: RPI Women in Programming, NSLS, Varsity Track and Field, Art Club, Sole Survivors