

# SAMANTHA SANCHEZ

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## EDUCATION

### University of Central Florida

- **M.S. Computer Science** **Concentration:** Computer Graphics May 2024
- **Relevant Courses:** Computer Graphics, Ray Tracing, Real-Time Rendering Pipeline, 3D User Interfaces for Games

## PROFESSIONAL EXPERIENCE

### THE WALT DISNEY CO.

- Disney College Program Intern Custodial – Pop Century Resort 2021 - 2022
- Showed courtesy and respect to Guests of all ages.
  - Practiced safe behaviors and ensure to always put safety first.
  - Performed role efficiently while projecting a positive image so Guests get the most out of their visit.

### FLORIDA SOLAR ENERGY CENTER

- Data Engineer Research Assistant 2019 - 2021
- Worked with Dr. Seignur on various data analysis reports to determine the cause of failure on solar panels.
  - Analyzed data and created automated weekly reports using machine learning algorithms in Python.
  - Implemented mathematical algorithms in Python to calculate velocity, temperature, and irradiance.
  - Developed problem-solving skills to efficiently identify and correct issues in data collection.

### UCF IT

- Technical Support Specialist 2017 - 2019
- Troubleshoot, maintain, and repair laptops, desktops, workstations, printers, and peripherals.
  - Assisted students and faculty with administrative password resets, account lockouts, and account setups.
  - Resolved VPN-related issues and server application access issues.
  - Sustained knowledge base articles to document solutions, processes, and procedures.

## CAMPUS INVOLVEMENT

### GIRLS WHO CODE UCF (GWC)

- President/Founder 2022-Present
- Created a collaborative environment to empower women from different backgrounds to code.
  - Recruit over 45 members exceeding expectations for Fall 2022.
  - Host beginner-friendly algorithms workshops to introduce our non-stem members to programming.

### ACM SIGGRAPH UCF

- Treasurer 2022-Present
- Oversee the budgeting of costs and cost management done by the club.
  - Delivered financial reports of the club for other board members by the end of each month.
  - Recorded expenditures and income, collected money from club projects and deposited club funds.

## PROGRAMMING PROJECTS

### 3D Gravity Simulator – Personal Project

- Programmed a simulation in C++ using OpenGL to simulate gravity between planets in space.
- Implemented physics and math equations to calculate Gravity, Mass, and Acceleration.
- Modified fragment and vertex shaders to display texture mapping on the planets.

### Asteroids Game – Personal Project

- Developed an asteroids game in C++, implemented as a UI application.
- Created a sandbox in which the user can launch missiles to destroy asteroids while generating a score and triggering sounds.

### Specular Image-Based Lighting

- Created a Skybox environment using cube-maps in OpenGL.
- Imported a complex model using Assimp loader and calculated its normal vectors to reflect the environment.
- Utilized Cook-Torrance BRDF function to specify how much radiance is diffused and how much is reflected in a specular way.

### Patronus Spell Rendering

- Simulated a Patronus spell using particle rendering in Houdini and Nuke.
- Enabled movement on the rendering to display the light effects as seen in the HP movies.

## SKILLS

- **Programming Languages:** C++, C, Python, Java, SQL, PHP, JavaScript, HTML5, CSS3, R.
- **Operating Systems:** Linux, Unix, Windows, macOS.
- **Tools and Frameworks:** Git, Github, OpenGL, Unity2D
- **Applications:** Houdini, Nuke, Maya, SolidWorks, MATLAB, Photoshop, Procreate.