Benjamin Cagan

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Education

Carnegie Mellon University, Pittsburgh PA
Bachelor of Science, Computer Science with Concentration in Computer Graphics, Minor in Japanese Language
Current QPA: 3.32/4.0
December 2023, expected (currently Junior)

Projects

Developer on Scotty3D for Carnegie Mellon's 15-462 Computer Graphics Course
Link: https://cmu-graphics.github.io/Scotty3D/

Implemented features in software for 15-462 to enable students to run assignment code, edit 3D models, add models to scenes, and animate and path trace scenes.

Game Creation Society Projects
Link: https://www.gamecreation.org/members/BenCagan

Developed numerous game projects with other students in extracurricular game development club.

Computer Game Programming Final: Coffee CAT-tastrophe
Link: https://poshon.itch.io/coffee-cat-tastrophe
https://github.com/gcwhitfield/Game-Programming-final-game

Wrote cel-shader art-style OpenGL code and designed and implemented game control algorithms for game project. Collaborated within team of students to develop the game from scratch in C++ and OpenGL.

Work Experience

Teaching Assistant (15-213 Introduction to Computer Systems)
CARNEGIE MELLON UNIVERSITY - Pittsburgh, PA - January 2021 to May 2021

- Instructed to and guided conversation between groups of students on core x86 architecture concepts
- Taught debugging techniques and problem-solving approaches to systems-level programming challenges during office hours and online

Teaching Assistant (15-122 Principles of Imperative Computing)
CARNEGIE MELLON UNIVERSITY - Pittsburgh, PA - June 2020 to August 2020

- Led instruction during recitations on core C programming concepts, data-structures, and algorithms
- Guided students through understanding how to solve programming challenges in C0 and C assignments during office hours and online

Skills

- **Knowledgeable in Python, Assembly, Java, CUDA, C, and C++ Object-Oriented Programming**
- **Knowledgeable in Unity Engine, Unreal Engine 4, Programming with Data Structures and Algorithms, and OpenGL**
- **Developed projects such as Malloc and a Path-Traced Renderer**
- **Intermediate skills in Japanese language; passed the JLPT N5 exam**

Relevant Course Experience

- **15-462 – Computer Graphics**
- **15-281 – Artificial Intelligence**
- **15-466 – Computer Game Programming**
- **82-372 – Advanced Japanese II**
- **15-468 – Physics-based Rendering**
- **15-418 – Parallel Computer Architecture**