Michael Wolf-Sonkin

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EDUCATION

Columbia University   August 2021 – December 2022
Master of Science, **Computer Science**   Cumulative GPA: 3.93/4.0

Stony Brook University   August 2018 – May 2021
Bachelor of Science, **Computer Science**   Cumulative GPA: 3.92/4.0
Bachelor of Science, **Applied Mathematics**

SKILLS

Technical: **C, C++, Python, OpenGL, GLSL, LabWindows/CVI, Git**
Courses: **Computer Graphics, Physically Based Animation, Computational Geometry, Competitive Programming**

WORK EXPERIENCE

Air Force Research Laboratory | Dayton, OH   April 2023 – Present
Software Development Contractor
- Developed traffic simulation to train machine learning model to identify and monitor vehicles.
- Utilized procedural road generation to create realistic and diverse road networks.
- Designed steering algorithms capable of following roads and navigating through intersections while avoiding collisions.

J.G. Smith Associates Inc. | Setauket, NY   Summer 2021
Software Development Contractor
- Developed LabWindows/CVI application to verify functionality of a test tool for DC-DC converters.
- Enabled engineers to simulate various tests in order to identify incorrect results.

Applied Research Associates Inc. | Raleigh, NC   Summer 2020
Software Development Intern
- Refined 3D model export pipeline to improve the viewing of tunnel facilities on a 3D representation of the earth.
- Split tunnel models into individual parts, allowing users to view specific sections of the tunnel system.

BitWize Corp. | Melville, NY   June 2019 – February 2020
Software Development Contractor
- Created LabWindows/CVI program to verify behavior of fuzzy signals of deicing controller in extreme temperatures.
- Improved accuracy and efficiency of testing procedures by automating manual processes.

PERSONAL PROJECTS

Virtual Rubik's Cube Solver – *Python*
- Utilized OpenGL for 3D graphics.
- Implemented Rubik's Cube solving algorithms, specifically CFOP.

Drift Simulation – *C++*
- Implemented 3D Perlin noise in GLSL to randomly generate a fluid-like landscape that evolves over time.

Ray Tracer – *C++*
- Capable of producing realistic images by tracing the path of light rays as they interact with objects in a scene.
- Implemented Phong shading, shadows, antialiasing, reflection, refraction, mesh rendering, texture mapping, and BVH.

Flocking Simulation – *C++*
- Modeled the behavior of individual animals in a flock using three simple rules: cohesion, separation, and alignment.
- By following these rules, the simulation can exhibit complex and realistic flocking behavior.

EXTRACURRICULAR ACTIVITIES

Competitive Programming – *Columbia University, Stony Brook University*   September 2019 – December 2022
- Collaborated with team members in weekly practice contests which leverage algorithmic problem solving.
- ICPC Greater NY Regional, 2021 – 3rd Place.

ADDITIONAL

Awards – Columbia University and Stony Brook University Dean's List – All Semesters
Interests – Rock Climbing • Rubik's Cubes • Cycling