Ben Mash

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benmash.github.io
Available: January - June 2023

Education

Northeastern University, Boston, MA — Sept. 2021 - Present
Khoury College of Computer Sciences — Expected Graduation: June 2025
Candidate for Bachelor of Science in Computer Science
GPA 3.8/4.0

Relevant coursework: Object-Oriented Design, Algorithms, Machine Learning, Conservation Genomics, Computer Systems

Computer Knowledge

Languages: Java, C++, C, Python(NumPy, SciPy, PyTorch), Javascript, R
Operating Systems: MacOS, Windows, Linux (Debian / Ubuntu)

Projects

NumPy Path Tracer - Python — Oct 2022 - Present
Software Engineer
- Designing and implementing an optimized CPU path-tracing renderer using NumPy
- Translating typical path-tracing routines into vectorized code
- Devising heuristics that take advantage of NumPy operations

Music Production Plugin - C++/Python — June 2021 - Present
Software Engineer
- Implemented resampling algorithms for dealing with multi-rate audio
- Optimized audio code using AVX2 SIMD vector processor instructions

Generative Art - Java/Python/GLSL — Feb 2020 - June 2021
Designer
- Created a series of digital artworks using Processing and Blender
- Implemented geometric algorithms such as 3D Bowyer-Watson and SDF path tracing
- Explored various data structures and mesh representations for efficiency

Work Experience

TIC Summer Camp, Potomac, MD — June 2018 - August 2019
Coding Counselor
- Taught children aged 7-15 how to program small games using either Java or Scratch
- Planned two-week curriculum with fellow counselors and adjusted as needed
- Responsible for health and safety of campers

Tech Cafe, Silver Spring, MD — March 2014 - Dec 2019
Volunteer
- Solved technology issues for senior citizens
- Collaborated with other volunteers to solve issues efficiently

Interests

Hiking, scientific computing, modern and contemporary art, gardening, sustainability, architecture, experimental music, dramatic movies, film photography