

dan cascaval

🏠 5728 Solway St, Pittsburgh, PA ✉ cascaval@cmu.edu 📞 (650) 223-1634 🌐 dan.cascaval.us

Education

Carnegie Mellon University

Pittsburgh, PA

B.A. • Expected Majors: Computer Science, Architecture • GPA 3.77 _____ Expected May 2019

Current Courses Computer Systems, Software Design/Concurrency, Parallel Algorithms/Data Structures

Past Courses Imperative Comp., Functional Programming, Generative Modeling, Comp Design, Calculus 3D

Distinction Deans List, 4/5 semesters; School Honors and Design Commendations, *All Studios*

Experience

Carnegie Mellon University

Research Assistant, Manufacturing Futures Initiative _____ 06/17 - 12/17

- Procedurally generated complex surfaces with physical simulation and evolutionary algorithm.
- Designed and implemented flow analysis simulations to create embedded, 8-board wiring pattern.
- Scripted toolpathing and code for robotic fabrication of arbitrary panels using 6-joint robots.
- Developed multithreaded components, improved simulation speed and memory usage by 10x.

Head Content TA, 48-120/1 Digital Media _____ 08/16 - 01/18

- Create detailed technical workflow tutorials on 3D modeling, scripting, rendering, animation.
- Design, develop, and execute 2-week projects for multi-semester course in computational media.
- Run recitations, workshops, and personal critique sessions for technical fundamentals.

Project Green Home

Project Intern _____ 07/16 - 12/16

- Independently designed and implemented web platforms to promote sustainability in community.
- Developed custom branding, graphics and letterhead for sustainable advocacy and outreach initiatives.

Projects

Impala : Parallel Component Library for Grasshopper _____ *Independent, 2017*

- Implemented fast numerical, parallel algorithms to perform 100,000+ object physical simulations
- Devised extensible, object-oriented, structure-agnostic design patterns to maximise implicit parallelism
- Open-sourced 12 components as a contribution to McNeel's Rhino3D plugin environment

Synthetica : 3D Realtime Procedural Simulation _____ *Course Project, 2017*

- Utilised game programming principles to design efficient data structures for 60FPS+ real-time graphics
- Iterated on user interface design and realtime interaction with procedurally infinite ecologic simulation

Skills

Languages/Libraries Python, C/C++, OpenGL, C#, Java, HTML/CSS/JavaScript, Processing, Standard ML

Software Grasshopper3D, Rhino3D, V-Ray Render, Adobe Creative Suite, AutoCAD/Inventor, MasterCAM

Hardware 3D Printing (PLA/ABS/Resin/Powder), 6-Axis Robotic Arm, Particle Photon & Arduino