

# Marc Dunand

## Creative Technologist

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[Website](#)

[Portfolio](#)

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## Education

**Carnegie Mellon University** 2021 - 2025

Bachelor of Computer Science and Art

Concentration in New Media Art


GPA: 3.53

## Selected Coursework


- 15213: Introduction to Computer Systems
- Parallel and Sequential Data Structures and Algorithms
- Creative Coding
- Drawing with Machines
- Experimental Capture

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## Recent Work

**Collaborative Drawing Machine** | Python, OpenCV, vSketch, Axidraw | *January 2024 – May 2024* 

- Developed a system where a webcam using OpenCV captures a wavy line hand drawn on paper, guiding a pen plotter to add algorithmically generated doodles like houses, trees, and lakes along the line. This process transforms the hand-drawn line into a landscape with unique topology

**Procedural Everything** | Unity, C# | *October 2023 – Ongoing* 

- Developed a world rich in emergent behavior and procedural generation, including procedural landscapes, procedural animations, procedural life, and asemic (without meaning) language generation
- Life forms interact with each other and the environment, resulting in diverse emergent behaviors

**Scribble** | Python, vSketch, Axidraw | *February 2024 – Ongoing* 

- Researched what consistent graphical elements and data encodings emerge from written languages across cultures
- Built a machine that writes generative asemic (without meaning) script in realistic human handwriting external to any human culture

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## Relevant Experience

**Software Engineering Researcher** | Video and Media Design - CMU | *May 2024 - Ongoing*

- Created an experimental mocap lab space, implemented Vive, Rokoko, and CyanPuppets systems into the space
- Created workflows in Unity, NDI and ReadyPlayerMe to create live, mocap VR and AR performance art

Skills: Unity, C#, Mocap Systems, NDI Tools, Animation and Rigging, Oculus, Vive, 3D Rendering, Scene Composition

**Software Engineering Intern** | Soapboxx | *February 2023 - September 2023*

- Developed an extended backend for the Soapboxx website and connected it to image databases, GPT, and image GANs
- Collaborated with Soapboxx and IB5K teams to integrate my software using React, enhanced the UX of my implementation

Skills: React, Node.js, Python, JavaScript, HTML, LLMs, GANs, Prompt Engineering, Databases, API Integration, Fullstack Development

**Data Science Intern** | Amaral Lab, Northwestern University | *March 2020 - August 2021*

- Worked with graduate and postdoc students to research microbial assemblies by creating my own computational model of the phenomenon in Python that more accurately predicts growth and collapse of microbial assemblies
- Developed responsive graphical representations of model behavior to improve accessibility of data

Skills: Python, Matplotlib, Data Analysis, Computational Biology, Systems Modeling, Data Presentation and Communication

**Software Instructor** | iD Tech | *June 2022 - July 2022*

- Taught groups of ten students ages 13-17 how to develop in Unity at beginner to advanced skill levels
- Ported finished projects to Oculus and integrated different control schemes with the Oculus controllers

Skills: Unity, C#, Oculus VR, Oculus AR, Education, Leadership, Communication

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## Skills

### Languages

Python, Java, JavaScript, C#, C, Standard ML, x86 Machine Code, HTML, Node.js, React.js, OpenCV

### Software

Autodesk Maya, Unity, Oculus, Processing, vSketch, GitHub, MediaWiki, TouchDesigner, InkScape, Adobe Suite, P5.js

### Media

3D Printing, Pen Plotting, Laser, Ceramics, Wood, Metal, Glass, Paper & Pencil, Worldbuilding, Circuit Architecture