Swan Carpenter

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Swan is a software engineer building highly interactive web-based experiences with cutting-edge AI/ML tools.

Education

Carnegie Mellon University
Class of 2021
Bachelor of Computer Science and Arts
Focus in CS and Environments Design
QPA 3.61, College Honors

Relevant Coursework

Computer Science
Computer Systems
Parallel & Sequential Algorithms
Theoretical Ideas in Computer Science
Principles of Imperative Computation
Applied Machine Learning
Robotics for Creative Practice
Conlanging with Language Technologies
Matrices and Linear Transformations
Calculus in Three Dimensions
Probability

Design
Environments Design I, II, III
Algorithmic Textile Design
Experimental Capture
Futures
Systems
How People Work

Skillset

Web
JavaScript
TypeScript
React
NextJS
Tailwind CSS
Sass
NodeJS
Electron
WebAssembly
Google Cloud
Cloudflare

Native
Python
Java
C/C++
Rust
C#
Swift

Management
Git
Bash/Shell

Generative AI
ChatGPT
Google Gemini
Midjourney

Tracking, Perception
MediaPipe
PoseNet/Blazepose
FaceOSC/BRF
Google Speech to Text
Intel Realsense
Microsoft Kinect

Graphics, Dataviz
MapBox
WebGL
p5.js
HTML5 Canvas

Multimedia
TouchDesigner
Character Animator
FFMPEG
Unity

Honors and Awards

Armero Award for Inclusive Creativity
2021
Capstone Project Award for *Zobits*

Pittsburgh AAF Award
2023
Gold for *Netflix Stranger Things Clock*

National American Advertising Award
2023
Gold for *Doodles Genesis Factory*

Work Experience

Fullstack Developer | Freelance
October 2023 - Present
Building key backend and frontend features for consumer-facing web applications and platforms. Clients include Deeplocal, Magic Circle Game Studio, and Mars.

Creative Technologist, Software Engineer | Deeplocal
June 2021 - May 2022 (lvl. 1), May 2022 - October 2023 (lvl. 2)
Leading software development on, and integrating novel generative AI models, motion/skeleton tracking, and machine learning algorithms and libraries into, award-winning interactive tactile and web experiences. Clients include Google, Meta, Netflix, TikTok, Museum of the Future, and Virgin.

UX Prototyping Intern | Motional (Aptiv-Hyundai JV)
June 2020 - August 2020
Prototyping and developing functional demo of a 3D map view within the management software for a large fleet of autonomous vehicles. Designs have since been implemented into the production software.

UX Prototyping Intern | Aptiv
July 2019 - August 2019
Designing and implementing interactive, location-based, contextual UI elements for in-car passenger displays in autonomous vehicles.

Notable Work

Google Cloud Next Postcards | Professional
Launched August 2023
Led software development for a microsite through which event visitors submitted travel memories to create and print postcards with custom AI-generated illustrations and messages. Stack included a NextJS-based frontend using Google's Imagen and PaLM (now Gemini) generative AI APIs, and a NodeJS server managing a series of printers.

Virgin Voyages Jen AI | Professional
Launched June 2023
Collaborated on development of a middleware REST API interfacing between frontend and AI server to generate, stitch, and stream custom (consensual) deepfakes featuring Jennifer Lopez inviting the recipient on a personalized Virgin cruise experience.

TikTok TAC Moderation Workstation | Professional
First site launched February 2023, subsequent sites launched later
Led software development and served as primary contributor for a set of kiosks demonstrating TikTok's moderation process. Kiosk application built in Electron with full multilingual support and Strapi-based, client-facing content management system.

Museum of the Future: Al Waha | Professional
Launched February 2022
Built out a suite of calibration software tools for multiple different exhibits within a major section of Dubai's Museum of the Future. These tools facilitated the tuning of the exhibits' Intel RealSense-based presence, motion, and hand tracking integrations as well as alignment of massive, room-scale digital projections.

Tartan Generator | Personal
Completed August 2022
Built a microsite that uses a tuned K-Means algorithm to extract color palettes from user-uploaded images and generate tartan plaids matching the extracted palettes. The site's core image processing engine was written in Rust and compiled to WebAssembly, running entirely in the browser.

Google Store Year in Search Activation | Professional
Launched December 2021
Developed an interactive installation version of Google's annual Year in Search video. Making use of BlazePose skeleton tracking and Google Speech to Text, the activation allowed store visitors to ask for in-depth search highlights from each month of 2021.

Zobits | Personal
Completed May 2021
Developed electronics and collaborated on mobile app and product design for a creative toy with which users create digital biomes by selecting from a set of Bluetooth-enabled magnetic organism figures. Generated biomes develop over the course of a week, with varying levels of success determined by a genetic algorithm.