

# Swan Carpenter

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thingsbyspoon.cc  
github.com/pitworker

Swan is a software engineer creating highly interactive web-based and tactile experiences.

## 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

<b>Web</b>	<b>Native</b>
JavaScript (ES6)	C/C++
TypeScript	Rust
React	Python
NextJS	Java
Express	C#
WebPack	Arduino
NodeJS	
Electron	<b>Multimedia, AI</b>
WebAssembly	TouchDesigner
Google Cloud	FFMPEG
Cloudflare	Unity
	ChatGPT/Gemini
<b>Mobile</b>	<b>Management</b>
Android Studio	Git
Dart/Flutter	Bash/Shell
Swift/XCode	

## 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 | studios5C**  
October 2023 - Present  
Building key backend and frontend features for consumer-facing web applications and platforms; using **TypeScript, React, ES6, Express, NodeJS, Python, and CloudFlare**. Clients include Deeplocal, Nik Bentel Studio, Magic Circle Game Studio, and Mars.

**Software Engineer | Deeplocal**  
June 2021 - May 2022 (lvl. 1), May 2022 - October 2023 (lvl. 2)  
Leading software development, designing system architectures, and writing code for award-winning interactive machines and web experiences; using **JavaScript, TypeScript, React, WebPack, NodeJS, Electron, Unity, and Google Cloud Platform**. 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; using **JavaScript**. 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; using **Java** and **Android Studio**.

## Notable Work

**Google Cloud Next Postcards | Professional**  
Launched August 2023  
Led software development for a microsite through which event visitors submit travel memories to create and print postcards with custom AI-generated illustrations and messages. Stack include 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 **TypeScript** middleware **REST API** interfacing between frontend and AI server to generate, stitch, and stream custom (consensual) deepfaked invitation videos featuring Jennifer Lopez inviting the recipient on a personalized Virgin cruise experience.

**Highmark "How's It Going?" | Professional**  
Launched May 2023  
Built out a server using **Rust** and **Tokio** and a series of **JavaScript/React** frontends to maintain a queue of user-generated survey data being simultaneously created, edited, and removed by multiple visitor- and staff-facing clients. Presented as part of the launch event for Highmark's "How's It Going?" campaign.

**Google Marketing Live Pinball | Professional**  
Launched May 2023  
Led software development and contributed to creative conceiving for a trio pinball machines running custom, **C#** and **Unity**-based gameplay software for Google's Marketing Live 2023 event. Software scope encompassed ball tracking, communicating with in-game hardware features, scoring, play mechanics, and mid-game cutscenes.

**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 **JavaScript** and **Electron** with full multilingual support and **Strapi**-based, client-facing content management system.

**Zobits | Personal**  
Completed May 2021  
Developed **Arduino**-based electronics and collaborated on **Unity**-based 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 written in **Java**.