Swan Carpenter

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github.com/pitworker

Swan is a software engineer creating highly interactive web-based and mobile 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

Mobile
Android Studio
Dart/Flutter
Swift/XCode
ADB

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

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

Multimedia, AI
TouchDesigner
FFMPEG
Unity
ChatGPT/Gemini

Management
Git
Bash/Shell

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

Software Engineer | studio5C
October 2023 - Present
Building key backend and frontend features for consumer-facing mobile and web applications and platforms; using **TypeScript**, **React**, **NodeJS**, and **Python**. 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 **mobile** and web experiences; using **Dart**, **Flutter**, **ADB**, **JavaScript**, **React**, **NodeJS**, **Python**, and **Rust**. Clients include Google, Meta, Netflix, TikTok, Museum of the Future, and Virgin.

Web 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.

Mobile UX Prototyping Intern | Aptiv
July 2019 - August 2019
Designing and implementing interactive, location-based, contextual UI elements for in-car passenger-facing **Android** tablets in autonomous vehicles; using **Java** and **Android Studio**.

Notable Work

Mobile-Powered Synthesizer | Professional
Unreleased; delivered September 2022
Contributed to a mobile app and accompanying **SDK** for a line of **Android** phone powered MIDI synthesizers. Was responsible for major pieces of the **Dart**/**Flutter APK**, **JavaScript**/**DOM** plugin site, as well as **documentation** for the app's SDK.

Magic Circle Games Platform | Professional
Delivered February 2024
Spearheaded development of a platform-wide pregame tutorial feature for **mobile web** social gaming platform. Developed in **TypeScript** and **React** on a serverless **CloudFlare** stack. The feature autogenerates for each game and can be easily customized and extended per-game.

Virgin Voyages Jen AI | Professional
Launched June 2023
Collaborated on development of a **Google Cloud Platform**-based **TypeScript** middleware **REST API** interfacing between frontend **mobile app** 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 mobile web** 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 Pixel Palette | Professional
Launched October 2022
Collaborated on software development for a mixed **Android mobile** and room-scale activation using Google's **Tensor** chip to process image data and generate custom, projected art pieces based on Google Store visitors' outfits. Built out a suite of **ADB**-based testing tools.

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