

Garrett Hagen



garretthagen21@gmail.com



(412)-897-5699 (cell)



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1568 Oliver Ave, Unit A
San Diego, CA 92109

EXPERIENCE

Apple Inc – Apple TV App

iOS Software Engineer (July 2022-Present)

- Creating and innovating exciting user experiences for the TV App on iOS, tvOS, macOS, and visionOS

Dexcom Inc – Continuous glucose monitoring systems

Software Development Engineer II (August 2020-July 2022)

- Assumed leadership role in implementing Bluetooth LE support for nex-gen transmitters in iOS core communication module
- Developed program to simulate mobile device usage scenarios and collect BLE connection statistics

Gener-8 – FDA approved CPM self-rehabilitation devices

Software Development and Hardware Design (2016-Present)

- Developed multi-threaded firmware for Raspberry Pi to control second-generation Gener-8 machine with support for wireless updates, real-time angle calibration, and improved LED feedback
- Designed and integrated system that calculates knee flexion and rotation angle and transmits results in real-time via Bluetooth LE
- Utilized Firebase and Vidyo API to develop Swift/Obj-C iOS app that communicates with Gener-8 machine for at-home rehab progress monitoring between patient and therapist, instant messaging, and video chat

Carnegie Robotics – Advanced robotics sensors and platforms

Co-op (Fall 2019)

- Created and maintained a sizeable C++ framework to reduce boilerplate code and provide convenient, common features for projects that utilize stereo camera functionality
- Developed and integrated C++ library for collimated LED backlight panel to be used in MultiSense lens fitting processes
- Created C++ application to assess the quality of extrinsic and intrinsic calibrations for MultiSense cameras using OpenCV, Ceres-Solver, Boost, and GTest
- Developed a modified firmware in C and a GUI in Python to verify the functionality of MultiSense PCBs prior to the start of assembly
- Refactored existing production software to build and deploy via Docker and improved dependency handling with CMake

Co-op (Spring 2019)

- Utilized Qt and OpenCV to develop an interactive C++ GUI that demonstrates concurrent left/right grayscale, color, and disparity image streaming on all MultiSense camera models
- Integrated functionality to existing manufacturing software that enforces the use of a specified version using CMake and Git

Co-op (Summer 2018)

- Utilized ROS and OpenCV to develop a Python GUI application that simultaneously collects, organizes, and stores data from a diverse set of stereo and depth cameras

iRevive – Mobile Phone and Computer Repair

Founder (2013-2020)

- Self-taught technician with 200+ successful repairs

For You Inc – Manufacturers of Duraband® and other exercise devices

Product Designer (2012-2015)

- Designed and received patent for Durabat® baseball training device (used by multiple professional baseball players)

EDUCATION

University of Pittsburgh – Main Campus Pittsburgh, PA

BS in Computer Engineering (*Fall 2016 – Summer 2020*)

Pitt Engineering Dean's Honor List (*Fall 2017 – Present*)

Major GPA – 3.82 / 4.0 • Cumulative GPA – 3.55 / 4.0

Pitt Computer Engineering Coursework

Data Structures (Java), Algorithms (Java), Object Oriented Programming (Java), Mobile Robot Platforms (C++/Python), Machine Learning (R), Operating Systems (C), Computer Architecture (C, MIPS), Computer Networks (C), Software Quality Assurance (Java), Intro to Web Development (Python, JavaScript, HTML, CSS), Software Engineering (Java), Advanced Digital Design, Electronic Circuits Lab

Pitt Math Coursework

Linear Algebra, Probability and Statistics, Differential Equations, Calculus 1 & 2, Physics 1 & 2

COMPUTER SKILLS

Languages – Swift, Python, Java, JavaScript, C++

Software/Tools/Frameworks – Git, Firebase, UIKit, Xcode, SwiftUI, Pandas, Docker, CMake, OpenCV, GTest, Appium, JUnit, Ceres, AutoDesk Inventor

Operating Systems – Linux, macOS, Windows, ROS

PROJECTS + OPEN SOURCE

wpa-pyfi (2021) – Developed open-source Python package for Raspberry Pi to programmatically manage Wifi network connections and settings via CLI or library integration. Available on PyPi index: www.pypi.org/project/wpa-pyfi

OmniBot (2020) – Developed omnidirectional robot with student-led team to fulfill requirement for senior capstone project. Developed iOS app and Bluetooth LE communication protocol to control the robot via gesture recognition, joystick, or autopilot.

Biometric Lock (2019) – Developed Swift iOS App which communicates via Bluetooth LE with Arduino that controls fingerprint scanner and solenoid lock. Designed all software/circuitry and rendered custom enclosure to house electronics in door frame

Industrial Arduino (2017) – Created a custom PCB shield in Altium Designer for use in a waterproof Arduino Enclosure

VOLUNTEERING

HCEF Instructor (2019 - 2020) – Taught basic computer science to middle school students experiencing homelessness