Garrett Hagen

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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 transimitters 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 colluminated 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