Daniel George

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# Summary

I’m looking to expand my software development experience and apply my programming skills in an internship next summer. I’m really interested in software engineering, computer vision, and machine learning. I’m ready to learn and eager to work with a team.

# Education

University of California, San Diego - graduation June 2024

Bachelor of Science in Computer Engineering

### Relevant Courses

* CSE 11 – Computer Science (Java)
* CSE 12 – Data Structures and Algorithms
* CSE 15L – Software Tools and Techniques
* MATH 18 – Linear Algebra
* MATH 20C – Multivariable Calculus
* MATH 20D – Differential Equations

# Skills

* Java: high proficiency
* C/C++: high proficiency
* Python: medium proficiency
* HTML, CSS and JS: medium proficiency
* Bash/Unix commands: medium proficiency
* Experienced in version control with Git
* Highly Proficient in designing parts and assemblies with Solidworks for manufacture on laser cutter, CNC Mill/Router, and 3D printer
* Moderately proficient in Eagle EDA for PCB design

# Work Experience

**Research Intern @ UCSD Advanced Robotics and Controls Lab (Oct 2020 – Present)**

* Biopsiable Lung Phantom for Robotics
  + Used computer vision techniques to find position and orientation of phantom from CT scan image
  + Wired and wrote code for robot to validate mechanical properties of phantom tissues, by controlling robot motion and logging and processing data from analog force-torque sensor
* Designed covers for CT-guided needle biopsy robot

**EE/Software Intern @ Medical Robotics Startup (Jun-Aug 2019, Redwood City, CA)**

* Created wiring schematic for motor control, which was used in working robot prototype
* Designed and built constant [Voltage LED driver circuit](https://drive.google.com/open?id=1Pn8i5gw39Lxq_b8LXLnbMQYzqQCrJJ4y) to analyze LED brightness and Color to find the optimal one for the robot
* Wrote software to display pose of 7DOF Robot arm using API in C++

# Personal Projects

* **Neural Networks** – wrote a [feedforward neural network](https://github.com/dangeo314/neural-networks) from scratch to classify handwritten numbers from the MNIST database to ~95% accuracy, using only numpy as a dependency
* **Home Amplifier and Speaker Set** – built from scratch starting from just PCBs and components. Learned about circuit assembly, transistor circuit design, crossover circuit design (high and low pass filters) and specialized types of capacitors for low noise applications

# Leadership Experience

**Robotics** [**Team 254**](https://www.team254.com/leaders/) **Technical Lead and Competition/Operations Director (2016-20)**

* Led high school FRC robotics team in electrical and mechanical design for 2019 season
* Led design and assembly of electronics and “Serializer” subsystem for 2020 robot
* Hosted workshops for team, teaching physics of electricity, brushless motors, encoders, sensors, and CAN protocol
* Led robot pit crew to victory at 5 competitions as Competition Director
* Worked on electronics for world championship winning, undefeated 2018 robot

**Arduino Club (2019-20)** – Founding member and Vice president of school Arduino Club, taught students about basics of electronics and programming. Used Arduino to create a new, more robust (higher range/reliability) control system for my robotics team’s T-shirt Cannon robot, *Shockwave*.

# Awards

**Science Department Award for Excellence in Physics (2020) –**  As a TA for AP Physics 1 and AP Physics C, I helped peers during office hours, set up labs, and graded lab reports