

Robert G. Gambee

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Professional Experience

Formlabs: 3D printing company in Somerville, MA 2015 to Present
Systems Integration Engineer

Responsibilities

- Prototype, test and integrate key printer systems
- Design and implement algorithms for production firmware
- Develop, document and maintain tools to enable other engineers to work more efficiently
- Facilitate communication between hardware and software teams
- Mentor junior team members to foster their technical abilities
- Interview job applicants to assess their problem solving skills

Projects

- Novel firmware architecture 2021 to Present
 - Independently developed firmware in Python for a fleet of prototypes
 - Advised architectural decisions for embedded and desktop software
- Dashboard for plotting live sensor data 2021
 - Independently developed over four days during company hackathon
 - Wrote backend in Go, wrote frontend in JavaScript, streamed data via WebSockets
- Laser pointing calibration for Form 3 and Form 3L 3D printers 2019 to 2020
 - Wrote factory software routines to calibrate thousands of printers
 - Rapidly deployed firmware fix for hardware issue that was blocking production line
 - Led effort to speed up automatic recalibration by a factor of five
 - Led validation testing to prove system meets accuracy goals
- Resin management for Form 3 and Form 3L 2018 to 2021
 - Implemented algorithm to maintain consistent resin level despite variable sensor readings
 - Overhauled resin tracking and dispense logic to improve customer experience
- STEM outreach volunteering 2022
 - Collaborated on lesson plan to introduce high schoolers to microcontrollers
 - Advised team of three students to build RFID reminder system during two day hackathon

Personal Projects

AI Safety Camp March to June, 2023
Generate Alignment Datasets (2 person team plus advisor)

- Scrape internet for data on research processes
- Fine tune large language model to make it more useful for AI alignment research

Chronicle 2023

Web app to keep track of how one spends one's time

- Record new entries and query past ones using Django framework
- Present data in table format for sorting and filtering
- Visualize data using bar and pie charts, as well as heat map

Advent of Code 2018 to 2021

Annual set of programming challenges

- Solved problems in different language each year teach myself something new

Software Skills

- Proficient
 - Python including NumPy, SciPy, Matplotlib
 - C++
 - Git
- Experienced
 - PyTorch, Django
 - JavaScript, HTML, CSS
 - Bash
- Familiar
 - Go
 - Rust

Education

Harvey Mudd College, Claremont, CA

<i>Bachelor of Science in Engineering with High Distinction,</i>	2011 to 2015
• GPA: 3.8	
• Inducted into Tau Beta Pi, national engineering honor society	2014
• Dean's List	2012 to 2015
• Advised fellow students on weekly Materials Engineering homework assignments	2014 to 2015

Continuing Education

• NYU's Deep Learning with Prof. Yann LeCun	2022 to 2023
• Google's Machine Learning Crash Course	2022
• fast.ai's Practical Deep Learning for Coders	2022

Undergraduate Projects

SpaceX , Hawthorne, CA & Harvey Mudd College	2014 to 2015
<i>Recoverable Flight Data Recorder</i> (5 person team)	
• Designed housing and selected materials to protect electronics from rocket explosion	
• Built and tested prototypes according to SMC-S-016 and other specifications	
• Contributed to software for receiving information over UDP and saving to SD card	
Academic Research , Harvey Mudd College	2014 to 2015
<i>Gas Permeation Across Nanocomposite Polymer Membranes</i> (5 to 8 person team)	
• Performed gas permeation experiments on synthesized membranes	
• Ran and analyzed molecular simulations containing over ten thousand atoms each	
• Wrote grant proposal for Amazon EC2 resources that decreased runtime by an order of magnitude	
Sandia National Laboratories , Albuquerque, NM & Harvey Mudd College	2013 to 2014
<i>Measurement of Barium Titanate Nanoparticle Permittivity</i> (5 person team)	
• Developed analytical and numerical models for interpretation of experimental data	
• Presented work at Materials Research Society meeting as invited speaker	
• Project findings were later submitted to several scientific journals for publication	