

Jacob Sharf, Software Engineer

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SUMMARY	Experienced in bringing proof-of-concept prototypes to production. Breadth of experience in software engineering, machine learning, and firmware. Depth of experience in C++, Python, and Systems software.	
EXPERIENCE	Research Engineer - <i>Cornell Language, Interaction, and Learning Lab</i> https://cb2.ai/	2021-09-20 - Present
	Research platform for Natural Language Processing (NLP) interactions. Created dataset of grounded language instructions in collaborative asymmetric user scenarios. Online demo serves live multi-modal model on website, simulated self-play, and dataset management.	
	<ul style="list-style-type: none">Dataset of 500+ interactions played on AWS mechanical turkOptimized Python for low latency game server (1-5ms server latency)Client in Unity and C#. Distributed via WebGLACL 2023 system demo paper; available at arxiv.org/abs/2303.08127	
	Software Engineer - <i>Alphabet</i>	2015-07-21 - 2021-08-04
	Developed systems software. C++ and Python. Realtime distributed systems. Software Reliability. <ul style="list-style-type: none">Platforms (2 yrs): GPU and Accelerator cloud deployment. Signed binary distribution and system softwareDaydream (2.5 yrs): High-accuracy position-tracked VR controller firmware. Bluetooth low-latency sensorsDevices & Services (0.5 yrs): Consumer device HW. Google Pixel Buds development & factory bring-upWaymo (1 yr): Deterministic HW simulation framework. Hardware-in-the-loop testing and presubmit serviceReceived C++ Readability Certificate	
	Internship, Flight Software - <i>SpaceX</i>	June, 2014 - Sep, 2014
	Dragon spacecraft crew communication firmware. Realtime audio codecs and HW prototyping. C++ and Python	
	Internship, Static Analysis - <i>Coverity</i>	June, 2013 - Sep, 2013
	Performance analysis tools for Coverity's static analysis software. Python	
	Student Research, CASIT - <i>UCLA Center for Advanced Surgical and Interventional Technology</i>	April, 2012 - October, 2012
PROJECTS	Prototyped smart lower limb prosthetic device.	
	Plasticity Neural Network Framework	
	C++ Machine Learning Framework from scratch with symbolic differentiation and GPU acceleration. https://github.com/jsharf/plasticity	
	Argos Smart Camera	
	A home apartment monitor that uses cheap, ubiquitous wifi webcams to create a smart camera system. https://github.com/jsharf/Argos	
VOLUNTEERING	Stanford Code in Place - Weekly Section Leader, Code in Place 2021 & 2022 https://codeinplace.stanford.edu/	
	Weekly section lead for 10 students. Taught introductory Python course.	
EDUCATION	University of California Bachelors - Computer Science	2011-08-01 - 2015-06-20