

Abhay Gupta

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Current: [Seattle, WA 98104](#)

Portfolio: [abgup.com](#)

U.S. Citizen

After taking leave to help with family, I am transitioning back into the industry once the right job arises. Currently, I spend most of my time on personal engineering projects, website development, mentoring college and high school students, volunteering at a bicycle repair coop & makerspace, and a variety of sports and hobbies.

SKILLS

Languages	Frameworks	Software Tools	Modeling/Analysis	Hardware Tools
<ul style="list-style-type: none">• Python• C# & Lua• Javascript & VBA• HTML/CSS• Bash & Powershell• Vimscrip• C/C++• LabView	<ul style="list-style-type: none">• WinForms/WPF• Flask• Jekyll• Cordova• JQuery• Next.js• LaTeX & Maple• Matlab/Simulink	<ul style="list-style-type: none">• Git• Cmake• Jira/Azure• Docker• Figma• Microsoft Office• Linux• Android/iOS	<ul style="list-style-type: none">• SolidWorks• Siemens NX• OnShape/AutoCAD• Ansys CFX• Star CCM+• Abaqus• FreeCAD• Fusion 360	<ul style="list-style-type: none">• 3D Printers• Lathe/Mill• Drill Press• Bandsaws• Sanders/Grinders• Oscilloscopes• Soldering• Function Generators

EDUCATION

University of Washington	M.S. Robotics & Data Science <ul style="list-style-type: none">• Thesis - 3D Graphics & Regression Models 3.6• Advisors: Steve Brunton & Ashis Banerjee Python MATLAB C++	Sep 2018 - Dec 2019
Santa Clara University	M.S. Computer Engineering <ul style="list-style-type: none">• Half Completed Transferred to University of Washington 3.8 B.S. Mechanical Engineering <ul style="list-style-type: none">• Entrepreneurship minor Graduated in 3 years with honors 3.6 MATLAB L^AT_EX C Simulink LabVIEW Maple Lathe Mill	Sep 2017 - Jun 2018 Sep 2014 - Sep 2017
	OpenGL ROS	
	SolidWorks Abaqus Star-CCM+ Oscilloscopes	

INDUSTRY EXPERIENCE

Kawasaki Robotics SW Engineer, Robotics	<ul style="list-style-type: none">• Developed software to move wafer handling (scara) robots• Tested physical robotics arms on local and vendor facilities to ensure functionality• Optimized for throughput and reach requirements to maximize computer chip production capability AS - Domain Specific Language	Jun 2022 - Aug 2022
SummerBio SW Engineer, Robotics	<ul style="list-style-type: none">• Developed software drivers (6 DOF arms, benchtop systems) for VWorks• Built communication platforms through both Ethernet and serial port protocols• Built hardware testing rigs to ensure new hardware/drivers work with automation line• Unit tested drivers through manual isolation testing and automated via c# test framework, xUnit C# Figma	Oct 2021 - Feb 2022
Lam Research SW/ME Engineer 1y6m	<ul style="list-style-type: none">• Led and assisted Android app development via Cordova (JS) framework• Developed/Maintained software to optimize a 6 DOF robotic arm via C# WinForms• Built communication protocols for hardware components via Modbus, Ethernet, and Bluetooth protocols• Physically tested software and hardware in clean room environment via systematic approach• Analyzed test results via data science techniques to ensure repeatability and reliability metrics• Led development of and maintained a fishbone diagram issue diagnosis application with offshore developers via C# Xiamarin Framework on Windows and Android• Automated Android content upload and verification via VBA excel automation tools• Worked alongside machinists to develop custom test rigs and hardware components (sheet metal, aluminum/steel parts, injection molded designs, etc) for robotics arm applications• Designed and printed custom 3D components on a MakerBot and local vendors• Designed a custom electronics cart via Siemens NX fitting custom components and facility constraints C# JavaScript Python VBA Figma	May 2020 - Oct 2021
CSAA Insurance Physics Consultant 2y	<ul style="list-style-type: none">• Evaluated novel engineering and physics aspects for patent applications• Researched alternative approaches for products and methods	Oct 2018 - Oct 2020
	NX Teamcenter	

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INDUSTRY EXPERIENCE (continued...)

University of Washington Research/Teach Asst. 1y3m	<ul style="list-style-type: none">• Taught and led students in graduate mathematics courses for engineering• Developed a custom physics simulation of Optical Tweezers via OpenGL in C++• Created a digital twin of a compliant motor and optimized model via novel regression techniques. C++ Python OpenGL ROS	Sep 2018 - Dec 2019
Santa Clara University Research/Teach Asst. 1y9m	<ul style="list-style-type: none">• Simulated biological membrane fracture through AI methods (<i>see paper</i>)• Assisted teaching course in Numerical Analysis to undergraduate engineering students Matlab/LaTex	Sep 2016 - Jun 2018
INTERNSHIPS 2y		
Microvision SDE Intern 3m	<ul style="list-style-type: none">• Modeled the response of Lidar activated SiPM (Silicon photomultipliers) Simulink MATLAB LTSpice	Summer 2019
TheraNova SDE Intern 3m	<ul style="list-style-type: none">• Developed a python software analysis system to understand gait measurements• Ensured the software analysis is accurate for 80+ patients Python MATLAB	Summer 2018
Valeo Systems Engr Intern 3m	<ul style="list-style-type: none">• Produced hardware and software demos for automotive OEMs• Collaborated with start-ups and OEMs to develop new cabin safety features VBA	Spring 2018
Pentair ME/EE Intern 7m	<ul style="list-style-type: none">• Optimized performance of steady state and transient phases of circuit breakers• Laboratory tested and simulated rail heating to melt snow Ansys CFX Solidworks Oscilloscopes , Function Generators , DC/AC Power Supplies , Soldering	Winter 2017
Accel Biotech ME Intern 3m	<ul style="list-style-type: none">• Prototyped medical device components and test assemblies• Supported mechanical, electrical, and software design of a blood diagnostic device SolidWorks Oscilloscopes	Summer 2016
Caltrans ME Intern 3m	<ul style="list-style-type: none">• Reviewed and advised on structural testing for next generation locomotives• Designed a floor plan using Microsoft Visio & participated in vendor meetings	Summer 2015

PUBLICATIONS, CONFERENCES & PATENTS

Automobile Damage Detection Using Thermal Conductivity J. Schow, and A. Gupta (US Patent)		Dec 2018
A Cellular Automaton for Modeling Non-Trivial Biomembrane Ruptures A Gupta, G. Reint, I. Gozen, and M. Taylor Presented at <i>The 13th World Congress in Computational Mechanics (WCCM)</i> Session: Novel Mathematical Models and Computational Methods, New York, NY Published in <i>Soft Matter</i>		July 2018 Sep 2018
Certifications:	Engineer-In-Training, State of CA Solidworks CSWA	May 2018 Mar 2015

VOLUNTEERING ACTIVITIES

Auto Angels, Bellevue Car Mechanic		Jun 2024 - Present
Rainier Scholars, Seattle Computer Science Curriculum TA/Development Assistant Python		Jun 2024 - Present
The Bikery, Seattle , Bicycle Board Member & Technician		Nov 2023 - Present
Capitol Hill Tool Library, Seattle Shop Manager Onshape , Machine Shop Tools (metal/wood/acrylic)		May 2024 - Present
San Jose Bicycle Coalition (SJBC) , Software & Data Consultant		Jul 2020 - Present
Santa Clara University , Alumni Engineering Mentor HTML , CSS , Javascript , Python		Oct 2023 - Present
San Jose Bicycle Clinic , Bicycle Technician		Jul 2020 - Present
FIRST Robotics Competition (FRC) 254, 5940, 1983, & 4180, Engineering Mentor JAVA , Onshape , SolidWorks		Aug 2021 - Present
Reddit Group: r/ControlTheory , Moderator		Dec 2018 - Present

SOFTWARE PROJECTS

206 Bike Polo Web Developer	<ul style="list-style-type: none">Update and maintain website using Javascript framework (Next.js) HTML CSS Javascript Next.js 206bikepolo.com
San Jose Bicycle Coalition Software/Data Consultant	<ul style="list-style-type: none">Use OCR package to automate uploading of sign in sheets into salesforce Python Salesforce bikesiliconvalley.org
Find a Paint Web Developer	<ul style="list-style-type: none">Developed website to compare paint brands to help high school mom find corresponding paint for work Python HTML/CSS JS Flask findapaint.com
Masala Blend Web Developer	<ul style="list-style-type: none">Help stepmother build webpage to sell homemade spices locally HTML CSS Javascript Shopify Jekyll masalablend.com
Personal Website & Resume Web Developer	<ul style="list-style-type: none">Build personal website via github pages & programmatically render resume via Latex HTML CSS JS Latex Jekyll Xetex abgup.com
Peer Porfolio Consulting Web Developer	<ul style="list-style-type: none">Assist undergraduates build their resume & web portfolio to gain industry experience HTML CSS JS Python Latex Django github.com/carly85/personal-resume
Bike Components Database Web Developer	<ul style="list-style-type: none">Build webpage & database to provide comparision between bicycle components Markdown github.com/ab12gu/freewheels

HARDWARE PROJECTS

Cap Hill Tool Library 3D Printing Lead	<ul style="list-style-type: none">Assist community members and create models/prints for in-house repairs and personal projects OnShape
Bike Polo Mallet Design/Fabrication	<ul style="list-style-type: none">Model, 3D print, and fabricate custom bike polo malletIterate through design process, optimizing for weight and reduction of stress concentration/shattering Onshape Drill, Drill Press, Bandsaw
Custom LEDs Smart LED Lighting	<ul style="list-style-type: none">Build custom LED timed lighting to match the circadium rhythm of the sunChange lighting within building from blue light to gradually hit red light throughout day C/C++ Raspberry Pi
Vehicle Builds and Repair Repair Tech	<ul style="list-style-type: none">Build custom bicycles in community to encourage human powered transportationRepair small and large vehicles in community (Electric Unicycles, Motored vehicles, etc) Torque wrenches, hydraulic lifts, etc Soldering iron, oscilloscopes, etc
Bike Component Automation Automation Lead	<ul style="list-style-type: none">Design and build wireless shifting and cam shafts on bicycles with peers FreeCAD C/C++ Arduino Uno github.com/ab12gu/bicycle-projects

HOBBIES

Sports	Sports	Indoor	Indoor	Miscellaneous
<ul style="list-style-type: none">JugglingHandstandsBicyclingUnicyclingBike PoloBasketball	<ul style="list-style-type: none">WalkingTennisCalestheticsRunningSkateboardingRollerskating	<ul style="list-style-type: none">Board GamesRubix Cube SolvingDancingMusic & MoviesDrawingPainting	<ul style="list-style-type: none">Weight LiftingReadingVideo GamesCookingYogaSocializing	<ul style="list-style-type: none">CodingBloggingContent CreationComedyRedditTinkering

For more: [abgup.com](#)