ALEXANDROS DRIVAS

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SKILLS

- **Programming Languages and Frameworks**: Python, SQL, React, JavaScript, Flask
- **Firmware & Embedded Systems**: Raspberry Pi, Arduino, PCBA design, embedded systems development, low-level device programming, PCB design, board level assembly.
- **CAD and Design Tools**: Fusion 360, Autodesk Inventor, AutoCAD, MeshCAM
- **Manufacturing Technologies**: 3D FDM printing, metal 3D printing, CNC machining (ferrous/non-ferrous metals and plastics)
- **Regulatory and Standards Compliance**: ISO 9001, ISO 13485, MDSAP, FDA Class II validation, IEC 62304 (medical device software)

WORK EXPERIENCE

Commure – Mountain View, CA

Lead Engineer | Jul 2024–Present

- Led software and hardware validation for a Class II medical device (510k submission), managing the entire process for device, server, frontend clinic dashboard, and mobile app.
- Directed device lifecycle testing and implemented component firmware redesigns, improving mean time to failure.
- Owned hardware, PCBA, and firmware design for Athelas Pro, ensuring all components met regulatory compliance.
- Coordinated clinical studies and collaborated with medical professionals to validate the device in real-world settings.

Hardware Engineer | Aug 2023–Jul 2024

- Redesign of our flagship at-home white blood cell analyzer class II medical device. boosting flagging accuracy, reducing test time by 45%, and cutting BOM costs by $45 per unit.
- Spearheaded hardware and firmware validation, including IQ, OQ, and PQ testing, ensuring regulatory compliance and smooth transfer to manufacturing.
- Partnered with the University of Washington to conduct clinical trials, validating device performance and integrating feedback.
- Implemented a rapid redesign of distress alert hardware, reducing false alerts by 22%, and designed an edge QC jig that processed 40,000 units.

Junior Hardware Engineer | Jan 2023–Aug 2023

- Supported design verification testing (DVT) for a home-use Class II medical device, driving functional validation and transfer to manufacturing.
- Sourced and managed inventory for custom parts, optimizing the BOM for a 200-device production run.
- Led efforts to address non-conformities in production, reducing device returns by 5%.
- Collaborated with firmware engineers to resolve critical bugs affecting production, enhancing device reliability.

Hardware Engineer Intern | Jun 2022–Aug 2022

- Designed and built automated electromechanical systems for white blood cell test strip manufacturing, increasing yield by 40%.
- Led quality validation studies, improving processes used in production and training operators.
- Prototyped hardware and software systems, performing iterative testing and design optimization for long-term reliability.

EDUCATION

Columbia University — New York, NY
M.S. in Biomedical Engineering — May 2024
Concentration in Design, Innovation, and Entrepreneurship
Courses: Bioinstrumentation, Product Design for Manufacturing, Signal Modeling & Processing, Biomedical Innovation, BioMEMS,

Chapman University — Orange, CA
B.S. in Biochemistry and Molecular Biology, Minor in Biophysics — May 2021
Courses: Bioengineering & Biotechnology, Biophysics, Molecular Genetics, Molecular Modeling, Physical Biochemistry

Awards: Dean's Academic Merit Scholarship, Center for Undergraduate Research Competitive Grant "Prototyping New Equipment to Understand Plant Drought Stress", 2020

Hardware Engineer Aug 2023– Jul 2024

- Spearheaded 6 month hardware and firmware redesign class II flagship medical device, improving image quality, accuracy of flagging model 30% reduction in WBC test run time, decrease BOM cost by $45. Wrote and tested all the firmware code changes, performed and tested all the hardware changes on my own.
- Lead team through hardware and software validation, IQ, PQ, OQ. Functional unit and systematic tests to validate components. Transfer design changes to to manufacturing and al of the FDA ISO documentation that comes with that.
- Led functional validation to test the device and tested with the university of Washington and Within Athelas internal clinical studies.
- Designed and implemented a custom frontend dashboard for enterprise customer to interface with the device, start a test, view patient results. Deployed to 25 sites in CAN and US.
- Fixing device bugs and updates.
- Fixing frontend ug and updates.
- Owned BOM for class II medical device,
- Led rapid 5 day redesign of Commure Strongline distress alert hardware improving usability and decreased accident alerts by 22%.
- Designed Built and implemented a adge QC jog testing each badge for sensitivity. Implemented this QC step in the manufacturing team which has processed 40,000 badges.

Jr. Hardware Engineer Jan 2023 – Aug 2023

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- Supported inn Athelas home class II medical devie DVT Design verification testing including, functional blood validation, validation and transfer to manufacturing
- Inventory management for class II medical device, identified custom vendors and sourced several custom parts, drafted part drawings and schematics, decreased BOM cost. Ordered all parts for the BOM to build 200 devices, the year's second build.
- Addressed product non-conformities for class II medical device and implemented improvements translating in a 5% decreases in returned devices.
- Partnered with firmware engineers to solve firmware bugs in the linear actuator that impact all blood tests in production.
- Lead role in customer service. Addressing device, networking issues, directly with patients and users remotely and onsite.
- Update ISO 9001 documentation, improving manufacturing process instructions, Inspection instructions, and QC testing.
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Mountain View CA

Hardware Engineer Intern Jun 2022– Aug 2022

- Designed and manufactured 3 electromechanical system to automate Athens One white blood cell test strip manufacturing process.
- Increased test strip yield by 40%.
- Over 100,000 strips stained onn this device. The device has eenn still used in the process 3 years later.
- Increased R&D test strip yield by 20%.
- Iterative prototyping of hardware, software, circuit, CAD designs, 3D printing and assemblies.
- Conducted quality and validation study, prepared manufacturing process instructions, trained operators and incorporated feedback from end-users.
- Learned RPM development flow through a suite of RPM devices.

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MASTER'S DESIGN PROJECT

Columbia University New York, NY
Pacemaker Design and Fabrication Sep 2021 – March 2022

- Collaborated with team of 4 engineers in the design and development of a cardiac pacemaker and cardiac electrogram to detect heart arrhythmia
- Spearheaded the design of cardiac electrogram sensing circuitry, stimulation circuitry, and hardware design
- Performed cardiac tissue characterization on animal case study, stimulation successfully controlled heartbeat at desired rate
- Integrated Bluetooth connectivity to device microcontroller to remotely monitor battery consumption

RESEARCH EXPERIENCE

Chapman University Orange, CA
Product Design Researcher Jun 2018 - May 2021

- Spearheaded the design and development of a functional leaf hydraulics imaging device coupler with integrated gas analyzer
- Prototyped product using 3D printer and CNC mill and performed subsequent in-field use testing
- Collaborated with university patent lawyers complete design documentation and draft utility patent
- Presented the leaf hydraulics technology and its impacts at the National Academy of Inventors Conference, Phoenix, AZ

LEADERSHIP EXPERIENCE

Medical Protective Equipment Design and Distribution Los Angeles, CA
Volunteer Lead Mar 2020 - Sep 2020

- Designed, manufactured, and distributed 900+ units of medical PPE including face shields, intubation boxes, and face mask clips to frontline healthcare workers in California, New York and Washington State
- Collaborated with respiratory therapists and physicians to optimize design of intubation boxes to align with procedural standards and regulatory needs
- Raised $3,000 on GoFundMe to support production and distribution costs
- Led and supplied a team of 8 Chapman University students with material to increase PPE production and distribution

Make these changes to the resume

- In the skills section
- Compare to other hardware and firmware roles and evaluate the skills I have presentedhere.
- What categories are more effective see online in job apps.
- Work exp
- Can you improve the sections to have 4-5 ullet poits of th most important info.
  write this resume like it is for an experienced hardware/firmware medical device engineer.