SAMEER KHAN

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EDUCATION

University of California, Berkeley - *Bachelor of Science, Mechanical Engineering* Dec 2023

Relevant Coursework: Engineering Project Management, Advanced Engineering Design Graphics, Dynamic Systems and Feedback, Internet of Things (IoT), Control of Unmanned Aerial Vehicles, Mechatronics Design, Prototypes, Troubleshooting

SKILLS

CAD : OnShape, AutoCAD, SolidWorks, Creo, REVIT, ANSYS, NX | 3D Modeling, Assemblies, Simulations, Sheet Metal Design
Programming : Python, C++, Java, MATLAB, R, Linux, MicroPython| Embedded Systems, Automation, Algorithm Development
Engineering : GD&T, Control Systems, FEA, CFD, HVAC, Product Design, Simulation, Modeling, Rapid Prototyping
Software : MS Office, Excel, LabVIEW, Simulink, Arduino IDE, SolidWorks Simulation

EXPERIENCE

Hybrid Auto Repairs - San Francisco Bay Area

Assistant Operations Manager Mar 2024 – Present

- Managed day-to-day operations of a small mechanics shop, including material handling, inventory control, and supplier coordination.
- Handled all ordering of parts, tools, and consumables, ensuring timely availability for repair work and minimizing downtime.
- Communicated directly with suppliers and vendors to negotiate pricing and arrange timely deliveries.
- Supported technicians with workflow coordination and ensured tools and materials were ready for daily operations.
- Performed hands-on mechanical work including diagnostics, maintenance, and repair of engines, brakes, suspension systems, and general vehicle servicing.
- Tracked finances, including income, expenses, and labor costs to support monthly budgeting and planning.
- Created organized spreadsheets of all aspects of business using Excel and MS Office.

University of California, Undergraduate Research Apprentice Program (URAP), Berkeley, CA

Design Engineer Intern Jan 2023 – Dec 2024

- Led design and optimization of a peritoneal dialysis machine, reducing material costs by 60% and improving energy efficiency by 54% through component redesign and alternative hardware components.
- Developed a pinch-actuation system with a linear actuator and user-friendly GUI, reducing user input complexity and improving operational ease, improving system performance by 30%.
- Created detailed 2D drawings with GD&T standards, improving manufacturability and reducing revisions.
- Built and tested functional prototypes, incorporating mechanical and software improvements based on real-world use cases.
- Presented progress in weekly engineering design reviews, receiving constructive feedback from senior engineers and refining design direction accordingly.
- Achieved a $50 cost reduction per unit by sourcing cost-effective microcontroller and actuator alternatives.

PROJECTS

Robotic Writing Arm June 2023 – Dec 2023

- Built a robotic arm capable of automated writing and sketching, achieving 95% accuracy in image replication.
- Programmed the robot using Arduino IDE and C++, implementing custom motion algorithms to interpret and execute user input in real time, resulting in precise pen control across three axes.
- Successfully demonstrated the robot's ability to replicate complex images.

Automatic Plant Watering System Aug 2022 – Dec 2022

- Built a smart irrigation system using ESP32, MicroPython, and a capacitive moisture sensor to maintain optimal soil hydration at the desired moisture level.
- Developed a wireless Python-based GUI to visualize moisture levels in real time, enabling user-friendly remote monitoring.
- Configured the system for continuous wireless access, allowing users to monitor soil conditions remotely from any location and at any time.