SAGAR MEHTA

MECHATRONIC SYSTEMS ENGINEER

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SUMMARY

Hands-on Mechatronics Engineer with 5+ years of experience designing, building, and validating robotic and electromechanical prototype systems. Strong background in actuator selection, sensor integration, embedded control, and mechanical design under tight size and performance constraints. Experienced in rapid prototyping, subsystem testing, root-cause failure analysis, and hardware–software integration for research and early-stage robotics platforms.

SKILLS

System Integration, Hardware Verification & Validation (V&V), Root Cause Analysis (RCA), Control Systems Design, Actuator Testing, Sensor Integration, Embedded Systems, Mechanical Design, Rapid Prototyping, DFMEA, DFM, Regulatory Compliance, Hardware-Software Integration

Tools: Python, C/C++, MATLAB, Simulink, Altium, Git, Embedded Linux, Communication Protocols

EDUCATION

Simon Fraser University
Burnaby, BC • 04/2018

***Master of Applied Science*:**
Mechatronic Systems Engineering

PES Institute of Technology
Bengaluru, KA • 05/2015

***Bachelor of Engineering*:**
Mechanical Engineering

ACCOMPLISHMENTS

- Owned end-to-end technical contributions for **patented** and **certified** alcohol and THC breath-testing devices, directly supporting **regulatory approval** and **market launch**.
- Spearheaded the design, prototyping, and validation of a full-scale concrete 3D printer, a functional robotics system that secured **$2M in investor funding** and accelerated company growth into large-scale construction automation.
- Published **four** peer-reviewed research papers in reputable scientific **journals**, showcasing expertise in control systems engineering and innovation.

WORK HISTORY

Cannabix Technologies Inc. - **Lead Product Development Engineer**
Burnaby • 06/2020 - Current

- Drove end-to-end development of compact electromechanical systems, coordinating design, prototyping, and integration of actuators, sensors, fluidic components, and embedded controls under strict size, performance, and timeline constraints.
- Planned and executed subsystem-level verification and validation efforts, defining test strategies, overseeing fixture development, data collection, performance metrics, and guiding iterative design decisions.
- Led structured failure investigations across mechanical and system domains, aligning stakeholders on root causes, prioritizing corrective actions, and ensuring closure through repeat validation.
- Orchestrated integration of sensors, embedded electronics, and mechanical assemblies to enable reliable closed-loop control and system-level performance targets.

- Coordinated cross-functional hardware and software teams through multiple development cycles, managing dependencies, resolving technical tradeoffs, and advancing concepts from early prototypes to production-ready designs.
- Established and maintained technical documentation, test reports, BOMs, and as-built configurations, supporting certification readiness and scalable manufacturing handoff.

CARPA 3D Construction - **Mechatronics Engineer**
Burnaby • 12/2018 - 05/2020

- Designed and integrated actuators, sensors, and control systems for a large-scale robotic platform, owning mechanical–electrical–software integration.
- Built and validated custom test setups to characterize actuator performance, motion accuracy, and structural behavior.
- Applied control theory and system modeling to improve motion accuracy and stability under load.
- Designed and fabricated mechanical components, fixtures, and brackets to improve reliability and repeatability.
- Effectively proposed and fabricated a working prototype that can print 3d concrete structures with an accuracy of +/- 5mm
- Successfully raised 2M in funding with the completion of the very first operational prototype

Simon Fraser University - **Research Assistant**
Burnaby • 09/2015 - 04/2018

- Developed and validated control algorithms using MATLAB and Simulink for dynamic mechanical systems.
- Designed experimental setups, collected data, and analyzed system performance to validate modeling assumptions.
- Published peer-reviewed research focused on control systems and system stability in 4 highly distinct journals.

Bosch-Rexroth - **Intern**
Pune • 01/2015 - 05/2015

- Organized and handled project requirements, resource identification, and task execution.
- Corroborated the design, efficiency and performance of the unit with the team at Bosch Rexroth
- Successfully developed a modular unit with higher energy savings that can be used in actuation of small cylinders, fixture clamps, and other machine tool applications
- An overall energy saving of up to 82 percent was achieved covering over conventional units

AWARDS

- Graduate Fellowship and Funding, Simon Fraser University
- Excellence in Leadership, Bosch-Rexroth India Limited
- Winner - Best Control/Programming, Eight-legged Robot, Robosoft Systems