Navdeep

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Professional Summary

- Biomedical Engineering student skilled in Python, SolidWorks, and ANSYS, with hands-on experience in device design, troubleshooting, and clinical equipment maintenance.
- Passionate about innovating in the medical technology sector by applying analytical thinking and creativity in a team-oriented setting to advance healthcare through interdisciplinary research and device development.

Internship

Junior Biomedical Engineer: Livasa Hospitals, Mohali, Punjab **July, 2024 – October, 2024**

- Ensured operational efficiency and safety of critical medical equipment including patient monitors, ventilators, defibrillators, syringe pumps, electronic beds, and centrifuges while leading the redesign of troubleshooting and record-keeping processes, resulting in a 30% improvement in service turnaround time.
- Trained over 50+ nursing staff across departments to proficiently operate devices which significantly enhancing equipment handling and reducing user-related errors.

Certifications/Courses

Crash Course on Python: Google **2025**

- Mastered core Python programming concepts such as data structures, control flow, and functions, building a strong foundation for problem-solving and automation.
- Applied Python to real-world biomedical and technical projects, including heart rate data analysis, task automation, and API integration—earning a 92.3% score in the course.

Foundation of UX Design: Google **2024**

- Applied UX design methodologies to hands-on projects, developing strong skills in user research, wireframing, prototyping, and usability testing.
- Demonstrated ability to create effective, user-centered designs, earning a 91% score in the course and showcasing a solid grasp of design thinking principles.

Projects

Biomedical Device Design (SolidWorks)

- Designed and modeled biomedical devices in SolidWorks, including a syringe mechanism, wheelchair, hip implant, stethoscope, tracheobronchial stent and cardiovascular stent
- Integrated ergonomic and clinical design principles to enhance patient comfort, usability, and manufacturability, bridging CAD modeling with real-world healthcare outcomes.

Python Programming

- Developed an object tracking system in Python using OpenCV and TensorFlow, demonstrating skills in computer vision, real-time detection, and algorithm optimization.
- Built a diabetes prediction model with machine learning, applying data preprocessing, feature selection, and classification algorithms to achieve accurate health risk prediction.

Arduino & Electronics

- Developed an SpO_2 monitoring system using Arduino UNO and the MAX30100 sensor, integrating pulse oximetry and heart rate detection.
- Programmed and calibrated sensor outputs to ensure accurate real-time data acquisition, supporting biomedical diagnostics and wearable health applications.

Simulation and Analysis (ANSYS)

- Modeled biomedical devices in SolidWorks and validated performance using ANSYS stress, thermal, and fatigue simulations under physiological loading conditions.
- Optimized device safety, durability, and biocompatibility by refining structure and materials for enhanced clinical reliability and long-term healthcare impact.

Education

Rayat Bahra University Bachelor of Technology (B.Tech), Biomedical Engineering |Punjab, India| June 2026
Concentrations: Biomechanics, Biochemistry, Human Anatomy GPA: 7.45 / 10.0

- Fest Coordinator, Techno Versa; led planning and execution of university's flagship tech fest with 5,000+ attendees, overseeing logistics, promotion, and team coordination