Sajni Shah

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Education

Cornell University — *Aug 2024 – May 2028*
Bachelor of Science in Biomedical Engineering, GPA: 4.0 — *Ithaca, NY*
Relevant Coursework: CHEM 2070, CHEM 2080, BIOMG 1350, MATH 2930, MATH 2940, PHYS 1110, PHYS 1112, ENGRI 1310

Research Experience

Research Assistant — *May 2025 – Present*
Biomanufacturing & Tissue Engineering Lab, New Jersey Institute of Technology — *Newark, NJ*

- Conducted research on the development of synthetic soft tissues to replicate human soft-tissue and muscle mechanics using DLP 3D printing, designing and printing customized soft-tissue constructs, advised by Dr. Amir Miri
- Optimized resin formulations and printing parameters—including exposure time, layer thickness, photopolymer percentage, and crosslinking density—through mechanical and rheological testing (tensile, compression, lap shear, and rheometer analyses) using porcine skin as a biological reference along with commercially available skin models.
- Extracted, organized, and statistically analyzed experimental data, producing graphs and tables for presentation.
- Developing anatomically accurate models for applications in medical simulation and patient-specific surgical planning.

Clinical Research Assistant — *Feb 2025 – Present*
Neurosurgery Research Group, Dept of Neurosurgery, Perelman School of Medicine, University of Pennsylvania — *Remote*

- Assisted in a retrospective study evaluating clinical use and patient outcomes of the Zebra catheter in neuroendovascular procedures—including thrombectomy, flow diversion, and angioplasty—advised by Dr. Visish Srinivasan.
- Reviewed patient charts and compiled procedural data on catheter positioning and performance, and assessed thrombectomy outcomes to assess catheter efficacy and support improvements in device safety and technique.
- Contributed to the Esperance MeVO Registry by assisting in protocol development to assess the efficacy of 3F and 5F catheters in treating medium vessel occlusions (MeVO) and distal large vessel occlusions (dLVO) in stroke patients.
- Drafted the IRB submission for an upcoming multicenter prospective study aimed at addressing gaps in MeVO/dLVO stroke treatment and refining endovascular stroke therapy through comparative clinical outcome analysis.

Extra Curricular Experience

Integrative Design Team Member — *Nov 2024 – Present*
Engineering World Health, Cornell University — *Ithaca, NY*

- Collaborated with 2ft Prosthetics on the OneSize Foot to expand global access to affordable lower-limb prosthetics
- Partnered with Solar Ear to design user-centric, kinetic-powered hearing aids with an emphasis on child accessibility
- Contributed to early-stage ideation, research, and prototyping for energy-harvesting devices in low-resource settings.

Volunteering

Emergency Medicine Technician — *Oct 2023 – Present*
Millburn-Short Hills EMS Squad — *Millburn, NJ*

- Provided basic life support and prehospital emergency care, patient transport in fast-paced environments.
- Coordinated patient handoffs with ED physicians and nursing staff and documented incident reports for each EMS call.

Pre-Op & PACU Patient Liaison — *May 2024 – Present*
Hospital for Special Surgery — *New York, NY*

- Communicated with the Pre-OP/PACU teams to ensure the coordination of patient care while comforting patients.

ICU & ER Patient Liaison — *Mar 2024 – Present*
RWJ Trinitas Regional Hospital — *Elizabeth, NJ*

- Assisted with patient comfort, routine care, and supply restocking. Supported nurses and providers in the ICU and ER.
- Donated new mom & baby kits and snack bags to patients in the maternity unit and discharged ER patients.

Certifications & Skills

Certifications: NREMT EMT, Red Cross BLS CPR, CITI Human Subjects (Biomedical), CITI Good Clinical Practice
Languages: Spanish (Intermediate) Technical: Java, Python, R, MATLAB, Fusion 360, CAD, MS Office, Data Analysis