

Pasindu I. Dodangoda

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EDUCATION

Stevens Institute of Technology, School of Engineering

Bachelor of Engineering, Biomedical Engineering

Minor: Computer Science

Relevant Coursework: Biomaterials, Biomechanics, Digital Signal Processing, Engineering Physiology, BioTransport Fluid Mechanics, Medical Instrumentation & Imaging, Thermodynamics, Design of Dynamical Systems

Awards: Edwin A. Stevens Scholarship, Stevens Grant, Chris Dhume Scholarship

Activities and Societies: Biomedical Engineering Society, Gear and Triangle, Men's Club Soccer, Sigma Nu

Anticipated Graduation: May 2026

Hoboken, NJ

SKILLS

Software: Solidworks, MATLAB, Simulink, Simscape, COMSOL, Arduino, Java, Python, C ++, MS Suite: Word, Excel, Powerpoint, PowerBI (SQL/SSRS)

Other Skills: 3D Printing, Instron Machine Testing, Machine Shop Tooling, Gel Electrophoresis, Tissue Culture, Pipetting, Titration, Statistical Analysis, Strong Verbal and Written Communication

PROFESSIONAL EXPERIENCE

Biomedical Device Technician Intern

June 2023 - August 2024

Bayshore Community Hospital

Holmdel, NJ

- Performed precise calibration and rigorous testing of critical biomedical devices, including Vasopress Mini Supreme and BD Alaris infusion pumps, ensuring device reliability and patient-specific accuracy
 - Managed and maintained biomedical equipment inventory, streamlining documentation processes and maintaining optimal equipment availability tailored to individual patient care needs
 - Collaborated within interdisciplinary healthcare teams to ensure timely maintenance, prompt issue resolution, and enhanced performance of biomedical devices, directly contributing to improved patient outcomes and safety
 - Integrated biomedical equipment strategically within patient rooms to optimize workflow efficiency for nurses and Patient Care Assistants (PCAs), enhancing patient care delivery
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PROJECT EXPERIENCE

Pharmacokinetic Modeling of Ocular Drug Delivery

Fall 2025

- Developed a pharmacokinetic model using COMSOL Multiphysics to simulate drug dispersion specifically targeting glaucoma treatment
- Evaluated various ocular drug delivery methods, including drug-eluting contact lenses, intracameral injectables, and punctal plugs, to assess bioavailability, intraocular pressure management, and patient comfort
- Simulated blood flow in the choroid using the Brinkman equations to analyze drug diffusion and convection relevant to glaucoma management
- Identified optimal drug concentrations for effective intraocular pressure reduction while preventing oversaturation and minimizing side effects
- Demonstrated the potential of computational modeling in enhancing personalized glaucoma treatments and reducing reliance on invasive experimental trials

Cementless Total Knee Replacement

Spring 2024

- Developed a redesigned Cementless Titanium Knee replacement and implemented new design structure (four-prong patella joint) for greater stability and rigidity
- Utilized SolidWorks to design implant as well as conduct FEA analysis to test the compressive strength
- Tested Titanium, Cobalt Chromium, and Polyethylene to create an implant with the greatest modulus of elasticity and tensile strength through design process
- Designed a manufacturing process for implant involving selective laser melting (SLM) and injection molding to develop the inner and outer mold of Patella joint, followed by sterilization and packaging methods for use on patients in Operating Room

Bone Scaffold Development

Spring 2024

- Developed a scaffold for femoral fracture treatment by evaluating bone characteristics and cell growth.
 - Conducted a finite element analysis using Solidworks to assess mechanical properties.
 - Employed additive manufacturing techniques to fabricate the scaffold with precise 3D printing parameters.
 - Evaluated mechanical properties and cell growth using the Instron 5965 force measurement system.
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