

Aashiya Kolengaden

(786) 832-1626 | akole005@fiu.edu | Miami, FL

EDUCATION

Bachelor of Science in Biomedical Engineering (*Cum Laude*), Florida International University April 2022

Master of Science in Biomedical Engineering, Florida International University May 2022 – Present

Research Project: Studying the binding mechanisms and interactions of fluorescent probes used to identify cardiovascular calcification.

SCHOLARSHIPS AND FELLOWSHIPS

Scholar, Opportunities for Undergraduate Research and Scholarship Program February 2022 – Present

Trainee, Coulter Undergraduate Research Excellence Program September 2021 – February 2022

RESEARCH EXPERIENCE

Undergraduate Cardiovascular Research Assistant May 2021 – August 2022

Cardiovascular Matrix Remodeling Lab – FIU Department of Biomedical Engineering Miami, FL

- PI: Joshua D. Hutcheson, PhD; Mentor: Valentina Dargam (PhD Candidate)
- Research Projects: Correlating Aortic Valve Structure to Heart Sound Characteristics; Diagnosing Early Aortic Valve Disease: Correlation Between Heart Sounds and Remodeling
- Duties: Responsible for weekly lab mice check-ups, writing protocols, dissections, histology, data collection, cardiac tissue imaging, and training lab assistants

CONFERENCE PRESENTATIONS

Poster Presentation October 2022

Biomedical Engineering Society 2022 Annual Meeting San Antonio, TX

Kolengaden, A.; Dargam, V.; Bakhshian Nik, A.; Hutcheson, J.D. A Comparative Analysis of Fluorescent Probes Used for the Identification of Cardiovascular Calcification.

ENGINEERING PROJECTS

Wearable Neuromuscular Electrical Stimulation (NMES) Device for Hip Rehabilitation August 2021 – April 2022

FIU BME Senior Design Project – Sponsored by Articulate Labs, Inc.

- Designed a device that provides personalized NMES therapy to patients recovering from a total hip replacement surgery
- Consulted prior research, healthcare professionals, existing market data, and engineering standards to create design inputs and design concepts, conducted feasibility assessments, simulations, and verification tests on the final product that consisted of an app-controlled circuit assembly and 3D printed mechanical components attached to a fabric scaffold

Cellular Model of a Neuron December 2020

- Developed a dynamic computational (MATLAB) model of a functioning neuron based on the Hodgkin-Huxley system of coupled ordinary differential equations that measure the reaction of a neuron to an external voltage

Photoplethysmographic Heart Rate Monitor with a MATLAB Graphical User Interface December 2020

- Created a low-cost and non-invasive cardiac monitoring app that uses photoplethysmography—an optical technique that can detect volumetric changes in blood vessels and cardiac pulse waves based on light reflected from the surface of the skin—to measure heart rate using only a video captured via a webcam

Digital Thermometer with a MATLAB Graphical User Interface October 2020

- Built an app that plots changes in ambient temperature over time via a physical circuit assembly consisting of an Arduino Uno, temperature sensors, and LEDs that were programmed using MATLAB

EMPLOYMENT HISTORY

Graduate Assistant February 2023 – Present

FIU Department of Biomedical Engineering Miami, FL

- Served as an assistant to the Graduate Program Director and compiled incoming MS and PhD applications for the Graduate Program Committee

Biomedical Engineering Student Tutor August 2021 – Present

FIU College of Engineering and Computing – Center for Diversity and Student Success Miami, FL

- Served as a tutor for bottleneck courses such as Biomaterials, Modeling and Simulation, and Transport Phenomena

General Biology I Learning Assistant

August 2020 – December 2021

FIU STEM Institute

Miami, FL

- Served as a learning facilitator during and after classes for approximately 300 General Biology 1 students per semester
- Held office hours, attended lesson planning meetings, created exam reviews, and graded assignments on a weekly basis

Mastery Math Lab Learning Assistant

January 2019 – June 2019

FIU Mastery Math Lab

Miami, FL

- Mentored students taking Intermediate Algebra up to Calculus 1 and provided them with problem solving strategies
- Proctored exams and assisted professors with administrative tasks as well as in-class group activities

LEADERSHIP EXPERIENCE**Overall Director**

April 2022 – Present

Alternative Breaks (AB) – FIU Center for Leadership and Service

- Established the vision and mission of the program, organized recruitment and fundraising events, oversaw all social media accounts, implemented marketing strategies, and facilitated weekly meetings and workshops with the AB Steering Committee, Site Leaders, and Participants to ensure the successful completion of our scheduled service-learning experiences throughout the academic year

Vice President

April 2022 – Present

Event Coordinator

September 2021 – April 2022

FIU Chapter of IEEE Engineering in Medicine and Biology Society

- Responsible for planning networking events, workshops, and managing the organization's website and social media
- Collaborated with the Department Chair and Faculty to promote FIU's Biomedical Engineering program via outreach events at local high schools and conferences

Treasurer

January 2022 – Present

Fundraising Director

March 2021 – December 2021

FIU Panther Robotics

- Helped the organization fundraise via social events, community service activities as well as securing sponsorships from local companies to represent FIU at VEXU, an international robotics competition

Vice President

April 2021 – April 2022

Treasurer

January 2021 – April 2021

FIU Chapter of the Minority Association of Pre-Health Students

- Founded Project Supplying Smiles, FIU MAPS' Fall 2021 Philanthropy Project and fundraised over \$5000 to be donated to local pediatric healthcare and educational non-profit organizations
- Sewed and donated 130 hand-made cloth masks to local community clinics, churches, and non-profit organizations on behalf of MAPS' Project Co-Op 19 Philanthropy Initiative during the height of the COVID-19 pandemic
- Designed and maintained the MAPS website and created merchandise items for fundraising purposes
- Planned monthly meetings, social and community service events, food and clothing drives, graduate school application workshops, and a medical service trip to the Dominican Republic
- Responsible for securing partnership deals with test prep companies such as Kaplan, The Princeton Review, and Blueprint for exclusive discounts and course scholarships

PROFESSIONAL MEMBERSHIPS**Member, Biomedical Engineering Society**

August 2022 – Present

Member, Student National Medical Association

August 2021 – Present

VOLUNTEERING**Media Point Person**

January 2023 – Present

Fellow

January 2022 – November 2022

*RESULTS Organizing and Advocacy Fellowship***Volunteer Coordinator Intern**

August 2022 – Present

Volunteer

July 2021 – Present

*Yaya Por Vida Foundation***Medical and Administrative Assistant**

April 2021 – August 2021

UHI Community Care Clinic

Peer Mentor*FIU International Student and Scholar Services*

May 2018 – April 2019

General Biology I PLTL Leader*Peer Led Team Learning Program – FIU Department of Biology*

June 2018 – December 2018

SKILLS**Programming and Computational Modeling:** *MATLAB, Arduino, Multisim, Solidworks, ANSYS, VMD, CHARMM, NAMD***Statistics:** *SPSS, R, Minitab***Software:** *Microsoft Office Suite, Mac OS, Canva, iMovie, Ultimaker Cura (3D Printing)***Languages:** *Fluent in English and Hindi; Beginner Spanish*