Prabha Sahiti Mandaleeka

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EDUCATION

Johns Hopkins University
Master of Science in Engineering **August 2021 - Present**

- **Major**: Biomedical Engineering
- Relevant Courses: Medical Imaging Systems, Machine Learning for Signal Processing, Computational Medicine: Imaging

Indian Institute of Information Technology, Design and Manufacturing, Kancheepuram
Bachelor of Technology **July 2016 - May 2020**

- **Major**: Electronics and Communication Engineering with a specialization in Design and Manufacturing
- **CGPA - 8.94/10**
- Relevant Courses: Advanced Digital Signal Processing, Designing Intelligent Systems, Systems Thinking for Design, Embedded Systems Design, Signals and Systems, Control Systems.
- Workshops and Certifications:
  - AI : AI for Medicine Specialisation(Coursera)
  - Health tech: Fundamentals of Neuroimaging(Coursera), Electronic Systems for Cancer Diagnosis (NPTEL), Introduction to Cognitive Psychology (NPTEL)

PUBLICATIONS

Reliability of Smart Wearable Device PHEEZEE Versus Other Traditional Devices in a Podiatric Setting: A Comparative Study **September, 2019**
Haaris Mohsin Moosa, Mythreyi Kondapi, Prabha Sahiti Mandaleeka, Susurla V S Suresh

Abstract in proceedings of the **IFASCON 2019**, *32nd Annual Conference of the Indian Foot and Ankle Society.*

PROFESSIONAL EXPERIENCE

Research Assistant **January 2021 - Present**
Mentor**: Mohamed Nashnoush* ***RadScholars, Canada

- Worked on a study for determining the accuracy of Small Intestine Contrast Ultrasound(SICUS) in assessing the relapse or remission of Crohn's Disease.

Project Associate **September 2020 - March 2021**
Mentor**: Dr Biswarup Mukherjee* ***Indian Institute of Technology, Delhi

- Designed a simulator to understand and visualise the behavior of an Electromyographic Signal based Upper Limb Prosthesis while performing certain standardised tasks.

Project Intern **January 2020 - June 2020**
Mentor**: Dr Karthic Narayanan* ***MaDeIT Innovation Foundation

- Worked on the physiological modelling of athletes.
- Designed and developed the statistical inferencing and predictive model to monitor athlete performance.

Artificial Intelligence Engineering Intern **October 2019 - December 2019**
Mentor**: Murugesh SK, CEO* ***Scermlind Healthcare

- Worked on Heart Rate Variability and Activity data for their device, 'Urufit'.
- Designed the preprocessing engine for the Machine Learning algorithm to evaluate athlete fitness.
- Designed the algorithm to monitor stress and recovery in athletes.

Systems Engineering Intern **May 2019 - October 2019**
Mentor**: Susurla V S Suresh, CEO & Managing Director* ***Startoon Labs

- Worked on the Signal Preprocessing, Parameter extraction and analysis of the Electromyographic (EMG) Signal for their device, 'Pheezee'.
- Improved the accuracy of the IMU algorithms for the foot and ankle, at the firmware end on Segger Embedded Studio.
- Designed the accuracy testing procedure and conducted the testing on healthy subjects.

Startup Sandbox Program **December 2018**
Mentor**: Dr Sudhir Varadarajan, CEO* ***MaDeIT Innovation Foundation

- Worked on technological interventions for adherence to the tuberculosis drug regimen as a part of an Entreprenurial Bootcamp.
- Performed market analysis, came up with product design, proof of concept and business plan for the product - 'Konseous'.

ACADEMIC PROJECTS

Brain Tumor Auto-Segmentation **January 2020 - May 2020**

- Implemented an algorithm in Python to auto-segment neural MRI images using a 3D U-Net.

Breast Cancer Detection **November 2019 - December 2019**

- Implemented an algorithm in Python on the MIAS Database to detect the probability of Breast Cancer using a Convolutional Neural Network.

ECG Signal Enhancement using an Adaptive Kalman Filter **January 2019 - May 2019**

- Implemented an algorithm in MATLAB to enhance the ECG Signal extracted from surface electrodes embedded in smart textiles.

Chronic Wound Monitoring System **January 2019 - May 2019**

- The device aims at improving the healing time of chronic wounds by monitoring surface parameters like moisture and temperature of the wound area.
- Worked on the embedded system design for the AT Tiny.
- Designed a flexible, fractal based, biocompatible sensor to detect moisture in the wound area.

TECHNICAL SKILLS

Languages	Python, MATLAB, C, Embedded C, LaTeX
Libraries	ImageIO, Keras, Scikit-Learn, Tensorflow, Pytorch, OpenCV
Tools	Unity, Arduino, Raspberry Pi, Segger Embedded Studio, Signal Processing, Image Processing, Machine Learning, Deep Learning