GOPI CHANDRAN RAVICHANDRAN

gopichandranravi@gmail.com www.linkedin.com/in/gopichandranravi
1735 West 19th Street, Apt 6D, Lawrence, KS 66046. +1-(785)-330-3853

OBJECTIVE

An enthusiastic Bioengineer with demonstrated knowledge and experience in medical device design and development, seeking to join medical device industry. Looking forward to consistently perform and add value to the company.

SKILLS

Core Skills: Microfluidics, Microfabrication, Rapid Prototyping, Instrumentation for Laboratory Automation, Biomedical Product Design and Development, Statistics, US FDA Regulations, ISO 13485, Lean Six Sigma: DFSS, DMAIC, Fluorescence Microscopy.
Software: AutoCAD, SolidWorks, SAS, Minitab, ImageJ, LabVIEW, Arduino IDE, ATMEL, Seg3D, Preview, Postview, FeBio.
Programming Languages: SQL, Python, C, C++, MATLAB.
Soft Skills: Teamwork, Critical Thinking, Multi-tasking, Leadership, Problem Solving.
Relevant Coursework: Biomedical Microdevices, Biomedical Product Design and Development, Biomedical Instrumentation, Biochemistry, ANOVA, Linear Regression.

EDUCATION

Master of Science, M.S. , Bioengineering, Track: Biomedical Product Design and Development **CGPA: 3.88/4.0**
University of Kansas, Lawrence, KS, USA. 06/2020
Bachelor of Engineering, B.E. , Biomedical Engineering **CGPA: 8.1/10.0**
SSN College of Engineering, Anna University, Chennai, India. 05/2017

RESEARCH

Integrated Microfluidic System for Digital Detection of Extracellular Vesicles. 01/2019 – 06/2020
- Designed a PDMS microfluidic device using AutoCAD and fabricated it using soft photolithography.
- Detected EV membrane proteins using Digital sandwich ELISA.
- Obtained digital microwell images using a fluorescence microscope.
- Improved sensitivity of individual extracellular vesicle detection to picomolar concentration.
- NIH funded research undertaken in collaboration with the University of Kansas Medical Center.

Automation in Digital Signal Acquisition using Closed-loop Electromechanical System. 08/2018 – 12/2018
- Designed the actuator system using Solid works.
- Developed a closed-loop circuit involving an actuator, force-sensing resistor, and Arduino.
- Achieved automated fast sealing within 5 seconds and avoidance of breakage of the microfluidic device.

Image Processing Algorithm for Analysis of Microwells in Digital mode using MATLAB. 01/2018 – 05/2018
- Developed a digital image processing algorithm to analyze images from a fluorescent microscope.
- Performed boundary detection and calculated average intensity for every microwell.
- Incorporated automation in post image analysis with 100% precision and 99.4% accuracy.

Development of a Working Prototype of Cost-Efficient Dialysis Machine. 2015 – 2017
- Lead a team of three. Designed efficient and cost-effective biomedical instrumentation design with appropriate sensors.
- Performed design modification and implementation of a biocompatible temperature sensor, peristaltic pump, bubble detection circuit, pressure sensor, and blood warmer with Arduino.
- Reduced the cost by 93.75%, when compared to average cost of commercially available dialysis machines.
- An internally funded IEEE Project undertaken in collaboration with Sri Ramachandra Medical University, Chennai, India.

PUBLICATION

Zhou, X., Ravichandran, G. C., Zhang, P., Yang, Y., and Zeng, Y. 2019. A microfluidic alternating–pull–push active digitization method for sample-loss-free digital PCR. Lab on a Chip, Vol. 19, Issue: 24, Page: 4104-16. 12/2019
- Implemented customized MATLAB image processing algorithm for a square-shaped microarray.
- Achieved automation of resultant image analysis ignoring the image artifacts.

PROJECTS

Reclinobike. 08/2019 – 12/2019
- Designed a product concept combining recliner and recumbent bike.
- Performed customer discovery, market analysis, design iteration, and developed a business plan.

Spinal stiffness measurement device. 01/2018 – 05/2018
- Team lead for the project.
- Performed customer discovery, design iteration, and wrote a model direct-to-phase II SBIR grant proposal.

Finite element model to study stress in knee-joint while running on ground vs on a treadmill. 08/2017 – 12/2017

- Developed a 3D model from MRI images of the knee using Seg3D.
- Employed software such as Preview, Postview, and FeBio for finite element analysis.

CONFERENCE PRESENTATION

Integrated Microfluidic System for Amplification-free Digital Detection of EV mRNAs. 10/17/2019
Poster Presentation, 2019 ACS Midwest Regional Meeting. Wichita, KS

WORK EXPERIENCE

Graduate Research Assistant, University of Kansas, Lawrence, KS 01/2019 – 06/2020
Performed research on developing an ultra-sensitive and integrated biomedical micro-device for cancer diagnosis.
Graduate Teaching Assistant, University of Kansas, Lawrence, KS 08/2018 –12/2018
Course: Mechanical Engineering Design.
As a Sole instructor of the course, I taught lectures on how to design and develop a product including brainstorming, brainwriting, house of quality, and feasibility analysis. Guided teams on customer discovery and product design iteration.
Graduate Teaching Assistant, University of Kansas, Lawrence, KS 08/2017 – 05/2018
Course: Introduction to Digital Computational Methods.
Trained around 200 students in MATLAB programming and guided students with their projects using sensors and Arduino.
Intern, Philips, Chennai, India 2015
Underwent training with clinical application specialist on application and maintenance of ultrasound medical equipment.
Intern, Sindoori Faber, Apollo Hospitals, Chennai, India 2015
Underwent training about the design and working principle of various medical equipment used in the hospital.
Trainee, Apollo Hospitals, Chennai, India 2016
Hands-on training on operating and calibrating multiple medical equipment from clinicians.

AWARDS

Morris Business Plan Competition Reward 08/2019 – 12/2019
School of Business, University of Kansas Lawrence, KS
- Won cash prize. One of the top 10 teams among 70 for developing innovative business idea and plan.

Wallace S Strobel Scholarship 08/2017 and 01/2018
School of Engineering, University of Kansas Lawrence, KS
- Awarded merit-based scholarship from the University of Kansas.

Kaizen Robotics National-level competition 03/22/2015
Indian Institute of Technology Research Park Chennai, India
- Won cash prize as a runner up for building a sophisticated line follower robot.

LEADERSHIP EXPERIENCE

Team Manager, Jayhawks Cricket Club, University of Kansas, Lawrence, KS 2018 – 2020
- Contributed to team management, fundraising, and planning game strategy.

Vice President, Department of Biomedical Engineering, SSN College of Engineering, Chennai, India. 2016 – 2017
- Organized 4 national level technical events and 1 international conference.

Member of Core Committee, INVENTE-National Level Technical Symposium, SSN College of Engineering, India. 2017
- Contributed to event marketing and fund management.

Mentor, IEEE Madras section, AVS College of Engineering, Chennai, India. 2016
- Mentored on event management and motivated aspirants to join IEEE.

Event Head, Srishti-National Level Technical Symposium, SSN College of Engineering, Chennai, India. 2015
- Organized a line-follower robot competition in the symposium.

CERTIFICATIONS

Learning Python, LinkedIn Learning 2020
Statistics Foundations:2 and 3, LinkedIn Learning 2020
Six Sigma Foundations, LinkedIn Learning 2020
Operational Excellence Foundations, LinkedIn Learning 2020
SQL for Data Science, Coursera, University of California, Davis. 2018
Kaizen Robotics Program, Lema Labs, Chennai, India. 2015

REFERENCE: Available upon request.