DANYA PRADEEP KUMAR

CONTACT INFORMATION

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RESEARCH INTERESTS

Biomechanics, frailty in older adults, age related functional decline, biomedical signal processing, image processing, numeric modelling.

EDUCATION

- University of Arizona, Tucson, Arizona *Aug 2017–May 2022 (Expected)*

PhD (Major: Biomedical Engineering, Minor: Electrical and Computer Engineering)
CGPA: 3.56/4.00
Project Title: Frailty Assessment in the Elderly Population based on the Quality of Day-to-day Walking and Daily Physical Activity

- Sri Jaya Chamarajendra College of Engineering, India *Sept 2015–Aug 2017*

Master of Technology (Major: Biomedical Signal Processing and Instrumentation)
CGPA: 9.80/10 (First in class of 17 students, Won **Gold medal**)
Project Title: Detection of Retinal Macular Edema from Optical Coherence Tomographic (OCT) Images

- GSSS Institute of Engineering and Technology for Women, India *Sept 2011–July 2015*

Bachelor of Engineering (Major: Electronics and Communication)
Aggregate : 76.45% (Top 10 percentile)
Project Title: Optimization of the Product (Patient Monitoring System) Testing Process

RESEARCH PAPERS

JOURNAL PUBLICATIONS

- **P. Danya** and Sheela N Rao 'Retinal Macular Edema Detection Using Optical Coherence Tomography Images', *IOSR Journal of VLSI and Signal Processing (IOSR-JVSP)* Volume 7, Issue 2, Ver. I (Mar. - Apr. 2017), PP 47-52.
- **P. Danya** and Sheela N Rao 'Optical Coherence Tomography to Detect Macular Edema: A Comprehensive Approach', *International Journal of Engineering Research and Technology (IJERT) NLPGPS – 2017 Conference Proceedings*, Special Issue – 2017, PP 70-75
- Joseph, S. S., & **Danya, P**. "BSNs: A Special Approach to Monitor Heart Rate. *International Journal of Latest Technology in Engineering, Management & Applied Science*, International standards publication, (2015) PP 57-62.

CONFERENCE PROCEEDINGS

- **P. Danya** and Sheela N Rao 'Optical Coherence Tomography to Detect Macular Edema: A Comprehensive Approach', *National Level PG Project Symposium on Electronics, Communication and Computer Science in Association with International Journal of Engineering Research and Technology*. Held at GSSS Institute of Engineering and Technology for Women, Mysuru on 27th May,2017.
  (Won **Best Paper Award**)
- **Danya P**, Nisha D, Deepika S, Aimen Fathima & Aruna Devi, Optimization of the Product Testing Process, *Project symposium,* Dept. of ECE - GSSSIETW, Mysuru, 29thApr,2015.
  (Won **Best Paper Award**)

RESEARCH POSTERS

- **Danya Pradeep Kumar**, Nima Toosizadeh, Jane Mohler and Kaveh Laksari '*Frailty Assessment Based on the Quality of Daily Walking*', during Biomedical Engineering Annual Research Expo. 2019, University of Arizona.

WORK AND INTERNSHIPS

- Biomedical Engineering, University of Arizona

Duration: May 2018 – present *Role*: Graduate Assistant

Summary of Work: Assessment of frailty among older adults (65 years and above) using wearable sensor-based daily physical activity and development of an algorithm for timely frailty assessment. The quality of everyday walking is analysed in time- and frequency-domains to establish associations of day-to-day walking with frailty.

- Sarver Heart Center, University of Arizona

Duration: Aug 2017– May 2018 *Role:* Graduate Assistant

Summary of Work: Use of image and video processing for the measurement of beat-rate and mechanical strain values of cardiomyocyte cells grown on synthetic graft material and study of the corresponding responses to different drugs in varied concentrations.

- Healthcare Technology Innovation Center (HTIC-IITM), Indian Institute of Technology, Madras

Duration: July- Sept 2016 *Role:* Project Intern

Summary of Work: A part of testing and validation processes carried out on LFIA (Lateral Flow Immuno-Assay) diagnostic equipment. Some of the aspects addressed are the non-uniform illumination of the test-strip, the interference of stray light during the process of camera focusing and variation of image intensity over time and with increase in temperature.

COURSES UNDERTAKEN

- Biomedical Imaging
- Biomechanics
- Biomedical Instrumentation
- Biology and Physiology for Bioengineers
- Advanced Biomedical Signal Processing
- BioMEMS and Nanotechnology
- Biometrics and Applications
- Digital Signal Processing
- Medical Imaging Systems and Processing
- Analog, Digital, Wireless & Multimedia Communication
- Information Theory & Coding, Network Security
- Microcontrollers & Microprocessors
- Pattern Recognition & Machine Learning
- Numeric Modelling of Physics and Biological Systems

SOFTWARE AND TECHNICAL SKILLS

MATLAB, Python, R, C, C++, Ride, Xilinx, Assembly Language Programming - 8051, Microwind, Circuitary

PROFESSIONAL SOCIETIES

- Volunteer for Biomedical Engineering Society – Student Chapter, University of Arizona since March 2019.
- Student secretary for Association of Electronics and Communication Engineering Students, GSSSIETW, Mysuru, India, July 2014 – June 2015.
- Volunteer for Association of Electronics and Communication Engineering Students, GSSSIETW, Mysuru, India, July 2012-June 2013.

REFERENCES

- Dr Nima Toosizadeh Email:ntoosizadeh@email.arizona.edu
  Assistant Professor, Dept. of BME, University of Arizona.

- Dr Kaveh Laskari Email: klaksari@email.arizona.edu
  Assistant Professor, Dept. of BME, University of Arizona

- Dr Jeffrey Rodriguez Email: jrod@ece.arizona.edu
  Associate Professor, Dept. of ECE, University of Arizona.