



# RAVI PRAKASH

 [www.linkedin.com/in/raprakashvi](https://www.linkedin.com/in/raprakashvi)

 [ravi.prakash@duke.edu](mailto:ravi.prakash@duke.edu)

 Durham, North Carolina  (919)699-8061

## EDUCATION

### Duke University

*Doctor of Philosophy in Mechanical Engineering and Materials Science*

2022 - Present

*Master of Science in Mechanical Engineering and Materials Science*

2020 - 2021

### National Institute of Technology Warangal

2015 - 2019

*Bachelor of Technology in Mechanical Engineering*

## PUBLICATION AND PRESENTATIONS

Codd PJ, Ross W, Ma G, Tucker M, **Prakash R**, Raman A, Zachem T, Eward W, Mann B. *TumorCNC: Engineering an Automated Closed-Loop Robotic System for Neurosurgery*. Neurosurgical Society of America. June 14, 2022. Maui, HI

Ma, G., **Prakash, R.**, Ross, W., Codd, P. J. (2022, April 13–15). *A Data-driven Method for Robotic Laser Orientation Planning* [Poster Session]. International Symposium on Medical Robotics, Atlanta, Georgia, United States.

Raman, A., Zachem, T., **Prakash, R.**, Park, C., Ma, G., Ross, W., Codd, P. (2022, April 13–15). *Automated Detection of Sarcoma Tissue in a Murine Model Using a Portable Endogenous Fluorescence Spectroscopy Device* [Poster Session]. International Symposium on Medical Robotics, Atlanta, Georgia, United States.

**Prakash, R.**, Srivastava, A., A., Ni, X. (2021, November 17). *Methods For Characterization of Mechano-Acoustic Speech Information* [Poster Presentation]. Duke MEMS Non-Thesis Defense, Durham, North Carolina, United States.

**Prakash, R.**, Xu, H. (2021, September 14). *Understand the basics of natural language processing and its application in processing physicians' notes* [Invited Presentation] Duke Family Medicine and Community Health Grand Rounds, Duke University, Durham, North Carolina, United States.

Chatterjee, A., Valaparla, R. K., **Prakash, R.**, Balasubramanian, K. (2019). *Comparative study of fluid flow and heat transfer in microchannels with uniformly varying cross-section*. In Proceedings of Emerging Trends in Mechanical Engineering (pp. 25–30). Warangal, Telangana.

## AWARDS

Dean's Research Award for Master's Students, *Duke University*

Mechanical Engineering and Materials Science Graduate Scholarship, *Duke University*

Woo Center for Big Data and Precision Health Fellowship, *Duke University*

Duke Design Health Fellowship, *Duke University*

Laboratory and Curriculum Development Fellowship, *Mechanical Engineering and Materials Science, Duke University*

S.N.Bose Undergraduate Research Fellowship, *IUUSTF, Department of Science and Technology, Govt. of India*

Govt. of India Scholarship for Undergraduate Students, *National Institute of Technology Warangal*

## GRANTS

DEI Microaward, Graduate and Professional Student Government, Duke University

12/2022

## WORK EXPERIENCE

### Graduate Researcher

01/2022 - Present

*Dr. Patrick Codd, Brain-Tool Lab, Duke University*

- Developing closed-loop tumor identification and resection platform for neurosurgery with focus on sensor fusion and novel device development.

### Graduate Researcher

07/2020 - 12/2021

*Dr. Xiaoyue Ni, Ni Lab, Duke University*

- Designed and implemented multimodal epidermal flexible device for speech based psychological state identification and neurodegenerative diseases

### Woo Center Fellow

05/2021 - Present

*Dr. Hanzhang Xu, Duke University School of Nursing*

- Investigating distinct pathways to predict the stage of AD/DRD at the time of diagnosis in underrepresented communities using Duke's EHR data

**Teaching Assistant, Graduate Capstone Lab**

01/2021 - 04/2022

*Prof.George Delagrammatikas,Duke University*

- Facilitated setting up of Graduate Capstone lab(Garage Lab) in Wilkinson and assisted in curriculum focused on open-source, hands-on experiential learning. Teaching assistant for Graduate Capstone course for Spring 2021,Fall 2021, and Spring 2022

**Acting Co-Lead,India**

05/2019 -08/2020

*Sustainable Living Lab*

- Designed and implemented new technology ventures along with Intel's global AI curriculum for non-tech audience.  
- Formulated and led "Futures+", a foresight driven community innovation program with entrepreneurial teams in Bhutan, India, Indonesia, and Singapore.

**Undergraduate Thesis**

08/2018 - 05/2019

*Prof.P.Bangaru Babu, National Institute of Technology Warangal*

- Thesis: "Experimental Study of Ledinegg Instability". Designed and fabricated a leakproof low-cost open-loop mini channel test setup to study hydrodynamic instabilities.  
- Enabled experimental heat transfer learning in resource-deprived areas.

**INTERNSHIP EXPERIENCE**

---

**S.N.Bose Fellow**

06/2018 - 07/2018

*Prof.Debjyoti Banerjee ,Multi-Phase Flow and Heat Transfer Lab, Texas A&M University***Summer Research Intern**

05/2017 - 07/2017

*Prof.Poh Seng Lee, Thermal Processing Lab, National University of Singapore***Summer Research Intern**

05/2016 - 06/2016

*Dr.Atul Thakur, Mechatronics lab, IIT Patna***TECHNICAL SKILLS**

---

Sensor Fusion, Computer Vision, Signal Processing, Embedded Systems, Teleoperability, BLE IoT, Machine Learning, Python, Ansys(Fluent), Abaqus, CAD Modelling,Open Innovation, Human Centric Design

**PROFESSIONAL MEMBERSHIP**

---

American Society of Mechanical Engineers

Institute of Electrical and Electronics Engineers

**LEADERSHIP**

---

President, Graduate Student Committee, Duke MEMS

01/2022 - Present

Secretariat Member, Graduate and Professional Student Government, Duke

08/2021 - 10/2022

MEMS Representative,Engineering Graduate Student Committee

08/2021 - 05/2022

Founder and Mentor, TEDxNITW

02/2017 - 05/2019

Facilitator + Technical Lead, Innovation Garage (Incubation center cum makerspace)

03/2016 - 05/2019