SANDESH G. BHAT, PH.D.

Senior Research Fellow working on Orthotics and Movement Science

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EXPERIENCE

Senior Research Fellow

Department of Orthopedic Surgery, Mayo Clinic

July 2023 – Present Rochester, MN, USA

- Acquired valuable grant writing experience through collaboration with Dr. Kenton Kaufman and Dr. Alexander Shin.

Research Fellow

Department of Orthopedic Surgery, Mayo Clinic

May 2021 – July 2023 Rochester, MN, USA

- Acquired valuable research exposure under the guidance of Dr. Kenton Kaufman in the Motion Analysis Laboratory.

Graduate Teaching Assistant

Arizona State University

Aug 2018 – Dec 2019 Tempe, AZ, USA

- Provided support to instructors and students in the Mechanics and Strength of Materials courses (EGR 217 and EGR 343).
- Taught the Computational Modelling of Engineering Systems course (course code: EGR 219).

Graduate Research Assistant

Arizona State University

Aug 2017 – Dec 2018 Tempe, AZ, USA

- Collaborated closely with Dr. Sangram Redkar and Dr. Thomas Sugar in the field of robotics and dynamical systems as a dedicated Ph.D. student.

Engineering Intern

NextGen Aeronautics

May 2017 - Dec 2018 Torrance, CA, USA

- Tested a new marker-less motion capture system and compared it against other popular motion capture systems.

PROJECTS

- ***Upper Extremity Orthosis*** (Mayo Clinic) from 2021 to 2023.
- ***Invariant Manifolds in Gait*** (Arizona State University) in 2019.
- ***Design of an Elbow Exoskeleton*** (Arizona State University) in 2019.
- ***Periodic Force Applied to the Hip During Gait*** (Arizona State University) in 2018.
- ***Topology Optimization of Automotive Lower Control Arm*** (Arizona State University) in 2018.
- ***Application of Genetic Algorithm and Various Optimization Routines*** (Arizona State University) in 2018.
- ***Development of an IMU Based Motion Capture System*** (Arizona State University) from 2017 to 2018.
- ***Design/Development of a Passive Prosthetic Ankle*** (Arizona State University) in 2017.
- ***Hyper-loop Control System modelling and Simulations*** (Arizona State University) in 2017.
- ***3D printed bionic arm*** (University of Mumbai) in 2016.

EDUCATION

Doctor of Philosophy

Ira A. Fulton Schools of Engineering, Arizona State University, USA

January 2018 – May 2021

- Specialization in Gait Dynamics and Control systems for Prosthetics/ Orthotics.
- Dissertation: Dynamical Systems Theory and its Application to Human Gait Analysis.

Master of Science

Ira A. Fulton Schools of Engineering, Arizona State University, USA

August 2016 – December 2017

- Specialization in Mechanical Engineering, Controls and Robotics.
- Theses: Design and Development of a Passive Prosthetic Ankle.

Bachelor of Engineering

University of Mumbai, India

August 2012 – May 2016

- Specialization in Mechanical Engineering.

ORGANIZATIONS

Director of Outreach

Graduate and Professional Student Association

August 2020 - April 2021

Assembly member

Graduate and Professional Student Association

August 2019 - May 2020

Student President

Mechanical Engineering Students Association

August 2020 - April 2021

Treasurer

Mechanical Engineering Students Association

August 2020 - April 2021

STRENGTHS

Matlab and Simulink | R | Python | C\C++ | ROS | Open-Sim | Biomechanics toolkit | Motion Capture and Data Analysis | Embedded Systems | Clinical trials | Operation of various Manipulator Arms | CAD CAM