
**Sujit Kumar Sahu**

Information

Address

Phone

Email Id

Social Media


Language

- English: Professional
- Hindi: Professional
- Odia: Native
- Italian: Elementary

# SUMMARY


A versatile, qualified, and proficient engineer, looking forward to use and further upgrade expertise in a dedicated organization while adding more feathers to the crown of the organization with hard toil.


# EXPERIENCE

**09/2021 - Present**
**Strasbourg**

## ICube, UNISTRA, France

**Early Stage Researcher**

- Mechanical and electrical characterization of stretchable strain sensors
- Designing and conducting tests to validate sensor fusion performance in soft and flexible robots used for Minimally Invasive Surgery
- Experience in the use of electronic simulation software, such as LTspice and PSpice
- Collaboration with researchers to integrate the sensing technology with various systems
- Provide direction and assistance to the workgroup in order to meet assigned objectives

**06/2019 – 09/2021**
**Pisa**

## The BioRobotics Institute, SSSA, Italy

**Early Stage Researcher**

- Experience in the development of stretchable sensors using the electrical resistive and inductive principle
- Sensor modeling and hypothesis testing
- Sensor data analysis to evaluate the performance
- Designing soft and flexible actuators with SOLIDWORKS
- Fabrication of flexible robots using 3D printing, laser cutting, and polymer molding techniques
- Scripting experience with LabVIEW, MATLAB, and Python
- Experience in handling various electronics, electrical, mechanical, and material components

**08/2017 – 05/2019**
**Patna**

## Incubation Centre, IIT Patna, India

**Researcher**

- Experience in the characterization of dielectric elastomer materials that work on the principle of the variable capacitance
- Mechanical and electrical characterization of different polymers, such as VHB, natural rubber, and Ecoflex
- Design experience with SOLIDWORKS, Pro-E, and AutoCAD
- Experience in the development of various mechatronic systems

# EDUCATION

**2019 – 2022**

### Scuola Superiore Sant'Anna Italy and University of Strasbourg France

**Ph.D. in Biorobotics (Ongoing)**

**Curriculum:** Surgical Robotics
**Project:** Intraluminal Sensing for Autonomous Navigation in Remote District
**Scholarship:** Marie Curie Fellowship

**2015 – 2017**

### Indian Institute of Technology Patna

**Master's Degree in Mechatronics**

**Relevant Coursework:** Fundamentals of Mechatronics, Sensors and Actuators, Advanced Robotics, Control System, and Modelling and Simulation
**Project:** Energy Harvesting from Dielectric Electroactive Polymer
**CPI:** 9.21/10
**Scholarship:** MHRD Fellowship

**2010 – 2014**

### BPUT ODISHA

**Bachelor's Degree in Mechanical Engineering**

**Relevant Coursework:** Engineering Mathematics, Thermal Engineering, Theory of Machines, Design of Machine Elements, Strength of Materials, Manufacturing Science, and Industrial Engineering
**CPI:** 8.16/10
**Scholarship:** CAFAS

# SKILLS

- Strong knowledge of engineering fundamentals
- Experience in the characterization of acrylic and silicone based dielectric elastomeric materials
- Hands on experience with electromagnetic trackers, capacitive, inductive, resistive, ultrasonic, and infrared sensors
- Experience in using hardware lab equipment such as oscilloscope, function generator, data acquisition devices, microcontrollers, CNC machines, 3D printers, PLC, and hydraulic and pneumatic setup
- Excellent presentation and communication skills: ability to present research data in front of technical professionals and layperson
- Data analysis experience in MATLAB and Microsoft Excel
- Experience in designing and prototyping different mechatronics systems

# Research Output (Link)

- Sahu, S. K., et al. "Shape Reconstruction Processes for Interventional Application Devices: State of the Art, Progress, and Future Directions." *Frontiers in Robotics and AI* 8 (2021).

- Sahu, S.K., et al. “Development of a resistive-based sensor for real time shape detection of a spring based flexible manipulator”, 10th Conference on New Technologies for Computer Assisted Surgery (CRAS)
- Sadangi, A. S., Sahu, S. K., & Patra, K. (2020). A Controlled Conditioning Interface Unit for Dielectric Elastomer Generator. IEEE Transactions on Instrumentation and Measurement, 69(8), 5620-5628.
- Sahu, S. K., Sadangi, A. S., & Patra, K. (2020). Energy harvesting from knee motion using dielectric elastomer generator. In *Advances in Asset Management and Condition Monitoring* (pp. 1261-1272). Springer, Cham.
- Ahmad, D., Sahu, S. K., & Patra, K. (2019). Fracture toughness, hysteresis and stretchability of dielectric elastomers under equibiaxial and biaxial loading. *Polymer Testing*, *79*, 106038.
- Sadangi, A. S., Sahu, S. K., & Patra, K. (2018, January). Comparison of circuits for dielectric elastomer based energy harvesting. In *2018 2nd International Conference on Inventive Systems and Control (ICISC)* (pp. 413-417). IEEE.
- Sinha, A. K., Sahu, S. K., Bijarniya, R. K., & Patra, K. (2017, December). An effective and affordable technique for human motion capturing and teleoperation of a humanoid robot using an exoskeleton. In *2017 2nd International Conference on Man and Machine Interfacing (MAMI)* (pp. 1-6). IEEE.
- S.K.Sahu, A.Javed, D.Ahmad and K.Patra ”Biaxial Planar Tensile Testing Device for Elastomeric Materials” Indian Patent Application no.- 201831040019.
- S.K.Sahu, K.Patra and S.J.A Koh ”Dielectric Elastomer Transducer Based Exoskeleton Type Knee Motion Harvester” Indian Patent Application no.- 201831005297

# Achievements

- The master project “Knee Energy Harvester” was selected for the spin-off in the incubation center of IIT Patna
- The project “Automated Tensile Testing Device” invented during my master’s degree was selected among the six best business ideas by Bihar Industry Association and Venturepark
- Qualified GATE, a highly competitive exam in India with 97 percentiles

# Extra-Curricular Activity

- Two-time winner of intra college chess tournament
- Captain of the college cricket team
- Coordinator of college techno festival and robotics club

# Declaration

I hereby declare that the above-mentioned information is correct to the best of my knowledge, and I bear the responsibility for the correctness of the above-mentioned particulars.

Place: Strasbourg, France

Name: Sujit Kumar Sahu

Date: 28.04.2022