

Dr. Sagar Hosangadi Prutvi

Research Engineer | Data Scientist

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About me

I hold a Ph.D., from the **Indian Institute of Technology – Bombay**. My exploratory research is focused on integrating **Triboelectric devices for Industry 4.0** applications, which led to the development of self-powering triboelectric vibration sensors for condition and health monitoring of rotary machinery. I have published **8 peer-reviewed journal articles** and **6 conference papers** across multiple fields.

As a seasoned **Research Engineer** and a **Data Scientist**, I wish to leverage my diverse skills to solve complex multi-physics problems to create an impactful success story.

Expertise

- Research and Development
 - Tribo-electric devices
 - condition monitoring and prognostics
 - Electro-mechanical devices
 - Vibration sensors
- Mechanical Engineering
 - 3D modeling
 - Structural Analysis & CFD
 - Design and optimization
- Data Science
 - Machine learning & statistical models
 - Deep learning models
 - Natural Language Processing
 - Anomaly, Fault & Failure prediction/detection

EDUCATION

Post-Doctoral Researcher 2024-present

universität Freiburg (LivMatS cluster of Excellence)

Project: Frequency tunable triboelectric energy harvester

Doctorate of Philosophy 2016-2022

Indian Institute of Technology Bombay (Grade: 8.6 CGPA)

Thesis: Triboelectric effect driven self-powered vibration sensors and wind energy harvesting device for enabling industry 4.0.

TATA fellowship awardee

M.Tech - Nanotechnology 2013-2015

National Institute of Technology Karnataka, Surathkal (Grade: 9.5 CGPA)

Thesis: Design and analysis of 1D silicon photonic crystal-based strain and mass sensor.

Collaborative research with IISc Bengaluru

B.E. - Mechanical Engineering 2007-2011

Visvesvaraya Technological University (Grade: 71.8%)

(Dr. Ambedkar Institute of Technology)

Thesis: Design and development of automated bike washer unit.

WORK EXPERIENCE (7 years)

Data & Analytics Specialist Dec, 2023 - Apr, 2024

Swiss Re

- Worked as an **A.V.P.** to implement Data science initiatives for process improvements
- Generating analytical & data science solutions to enhance processes and guide business decisions.
- Designed and developed an end-to-end client ranking solution to automate the auditing process.

Data Scientist June, 2021-Aug, 2023

Halliburton

- Managed a comprehensive proof-of-concept initiative with complete ownership of backend model development, high-level system designing, and front-end optimizations. I built a resilient regression-based model which can estimate the cloud-application runtime with >95% confidence.

Senior Structural Analyst June, 2019 - June, 2021

Gorgonian Technologies

- Here, I was actively involved in research and development of small-scale wind turbines. My major responsibilities were to perform CFD analysis and check the feasibility of the designer's ideas.

Mechanical engineer Feb, 2019 - Feb, 2020

Aumeesh Technologies

- Here, I worked on a KAFO (leg prosthetic) product to optimize its mechanical systems based on GAIT analysis.

Mechanical (CAD) Engineer Sept, 2011 - Aug, 2013

HCL technologies

- Provided CAD support for semiconductor domain clients. I specialized in harness routing path optimization, and creating its flat-board drawings for manufacturing.

Soft Skills and Strengths

Creativity Curiosity Flexibility

Self Confidence

Ability to Plan and Organize Autonomy

Adaptability Eye for Details

Problem Solving Team Working

Love Learning New Things Leadership

Good Communication

Managing Information Diplomacy

Good Listener Patience

BioData



Date of Birth

3rd July 1989

Gender

Male



Marital status

Married

Current address

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Permanent address

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7th main Nandakumar layout,
Ramanjaneya Nagara, Arehalli,
Bengaluru - 560061, India
Ph: (+91) 8660770698

Nationality

Indian

Languages

Kannada - Native

English - Professional fluent

Hindi - Conversational

Telugu - Conversational



SELECTED PUBLICATIONS

Journal Article

Total 8

Self powering vibration sensor based on a cantilever system with a single electrode mode triboelectric nanogenerator, Sagar Hosangadi Prutvi, Mallikarjuna Korrapati, and Dipti Gupta, *Measurement Science and Technology* 33 (7), 075115 (2022), [doi](#) 10.1088/1361-6501/ac5b2b

Triboelectric effect based self-powered compact vibration sensor for predictive maintenance of industrial machineries, Hosangadi Prutvi Sagar, Sunil Meti, Udaya K Bhat, and Dipti Gupta*, *Measurement Science and Technology* 32 (9), 095119 (2021), [doi](#) 10.1088/1361-6501/abe6d2

Transient dynamic distributed strain sensing using photonic crystal waveguides, Hosangadi Prutvi Sagar, Vignesh Mahalingam, Debiprosad Roy Mahapatra*, Gopalkrishna Hegde, Sathyanarayana Hanagud, and Mohammad Rizwanur Rahman, *Applied Optics* 56 (28), 7877-7885 (2017), [doi](#) 10.1364/AO.56.007877

Conference & symposiums

Total 6

Graphene Integrated Waveguide for Molecular Sensing, Sagar H P, and MR Rahman,, *International Engineering Symposium (IES) - 2015, Kumamoto University, Kumamoto, Japan*



SKILLS

Research & Development

Matlab | Rapid Prototyping | SEM & AFM | Thermal Evaporator | Plasma ashers | Screen printing | wet bench experiments | Instrumentations | Analog circuits | Arduino

Simulation & Analysis

COMSOL Multiphysics | Mathematica | Ansys | Ansa | LS-Dyna | LT-spice | Hypermesh | LAMMPS

3D modeling

Creo | ProE | Autocad | Solidworks | Catia

Data Science

Python | AWS (Sagemaker and Canvas) | Orange | TensorFlow | Keras | Pandas | Seaborn | Numpy

CERTIFICATES

- NLP - Natural Language Processing with Python (2022)
- Python for Time Series Data Analysis (2022)
- Python for Data Science and Machine Learning bootcamp (2021)
- Generative AI fundamentals (2023)

