

# Dr. Sagar H P

## Data Scientist | Research Engineer

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### About me

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

As a **Data Scientist**, at Halliburton, I leveraged AI & ML to craft solutions for diverse organizational needs. I'm now pursuing a challenging role to apply my multidisciplinary background in solving complex real-world multiphysics problems to drive innovations and create an impactful success story.

### Expertise

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

## 🎓 EDUCATION

### Doctorate of Philosophy 2016-2022

*Indian Institute of Technology Bombay*

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

**TATA fellowship awardee**

**Grade: 8.59 CGPA**

### M.Tech - Nanotechnology 2013-2015

*National Institute of Technology Karnataka, Surathkal*

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

**Collaborative research with IISc Bengaluru**

**Grade: 9.5 CGPA**

### B.E. - Mechanical Engineering 2007-2011

*Visvesvaraya Technological University*

(Dr. Ambedkar Institute of Technology)

Thesis: Design and development of automated bike washer unit.

**Grade: 71.8%**

## 🏢 WORK EXPERIENCE (6+ years)

### 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.
- Developed and implemented a variety of machine learning models including regression, classification, natural language processing (NLP), anomaly detection, and failure prediction.
- I contribute in company outreach by preparing technical abstracts for conferences to showcase Halliburton's innovations in oil and gas industry.
- Translated intricate business requirements into well-defined data science problem statements by collaborating closely with cross-functional teams to ensure alignment between technical solutions and strategic business objectives.

### 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

CreativityCuriosityFlexibility

Self Confidence

Ability to Plan and OrganizeAutonomy

AdaptabilityEye for Details

Problem SolvingTeam Working


Love Learning New ThingsLeadership


Good Communication


Managing InformationDiplomacy


Good ListenerPatience


BioData


 **Date of Birth**  
3<sup>rd</sup> July 1989

 **Gender**  
Male

 **Marital status**  
Married


 **Permanent address**  
#506, Siri Dew Drops Apartments,  
7<sup>th</sup> main Nandakumar layout,  
Ramanjaneya Nagara, Arehalli,  
Bengaluru - 560061, India


 **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),  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),  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),  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

**Data Science**

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


**Simulation & Analysis**

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


**3D modeling**

Creo | ProE | Autocad | Solidworks | Catia

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)