Dr. Sagar Hosangadi Prutvi

Experience

Postdoc researcher

Albert-Ludwigs-Universität Freiburg *May, 2024 - Present*

- Building an ML-based system that uses force sensor data to implement surface parallelization in tribo devices.
- Developed a Python-based application to automate data collection from multiple measurement devices.
- Designing a frequency tunable triboelectric energy harvester.

Data & analytics specialist

SwissRe *Dec, 2023 - Apr, 2024*

- Built a streamlined end-to-end client ranking system for the auditing team, reducing preparation time from months to hours to establish global standard operating protocols (SOPs).

Data scientist

Halliburton *Jun, 2021 - Aug, 2023*

- Led an AI/ML initiatives & built a digital solution to predict the application runtime with >95% accuracy.
- Submitted 2 patent ideas for novel sensor architecture and its use cases to enhance oil and gas field process.

Senior structural analyst & mechanical engineer

Gorgonian & Aumeesh Technologies *Feb, 2019 - Jun, 2021*

- Consulting researcher for IITB based technology start-ups.

Education

Doctor of Philosophy (Ph. D.) | Sensors and µ-energy harvesters

Indian Institute of Technology Bombay. *2016 – 2022*

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

Master of Technology (M. Tech) | Nanotechnology

National Institute of Technology Karnataka Surathkal *2013 – 2015*

- Thesis: Design and analysis of 1D silicon photonic crystal-based strain and mass sensor.
- Collaborative research with IISc Bengaluru.

Bachelor of Engineering (B.E.) | Mechanical Engineering

Visvesvaraya Technological University. *2007 – 2011*

Summary

An electro-mechanical researcher and experienced data scientist with more than seven years of professional experience in multinational corporations and early-stage startups. Combines expertise in engineering, research, and machine learning to address real-world, multi-disciplinary challenges and deliver innovative solutions.

Contact

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E-portfolio:
hprutvisagar.github.io

Github:
github.com/hprutvisagar

Skills

Data Science & Machine Learning

- Python: Pandas | Numpy | Seaborn | Scikit-learn | NLTK | Spacy | Keras | Tensorflow | Mlflow | Plotly | Orange
- Big Data: PowerBI | PySpark | SQL
- Cloud: AWS (SageMaker | Canvas) | Palantir Foundry

Design, Simulation & Analysis

- Simulations: COMSOL Multiphysics | Ansys
- Analysis: MATLAB | Mathematica
- CAD Tools: Solidworks | Creo (Pro-E) | AutoCAD
- Technologies: Rapid-Prototyping | SEM | AFM | Screen-Printing | Thermal-Evaporator | Plasma & Vacuum systems
- Electronics: Analog Circuits | Arduino | Instrumentation

Certifications

- Azure Machine Learning & MLOps: Beginner to Advance (Udemy, Ongoing)
- Natural Language Processing with Python (Udemy, 2022)
- Python for Time Series Data Analysis (Udemy, 2022)
- Python for Data Science and Machine Learning bootcamp (Udemy, 2021)

Publications

(Total 8 publications and 6 conferences/symposiums)

- Self-powering vibration sensor based on a cantilever system with a single electrode mode triboelectric nanogenerator.
  Sagar Hosangadi Prutvi, Mallikarjuna Korrapati, et al.
  Measurement Science and Technology, 33 (7), 075115 (2022)

- Triboelectric effect based self-powered compact vibration sensor for predictive maintenance of industrial machineries.
  Sagar Hosangadi Prutvi, Sunil Meti, et al.
  Measurement Science and Technology, 32 (9), 095119 (2021)

- Transient dynamic distributed strain sensing using photonic crystal waveguides.
  Sagar Hosangadi Prutvi, Vignesh Mahalingam, et al.
  Applied Optics, 56 (28), 7877-7885 (2017)

- Graphene Integrated Waveguide for Molecular Sensing.
  Sagar Hosangadi Prutvi, and MR Rahman.
  International Engineering Symposium (IES), Kumamoto University, Japan (2015)

Languages

- **German** : Beginner
- **English** : Professional
- **Kannada** : Native

Hobbies

- Hiking
- Cooking
- Table tennis