

SHIBU MEHER

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Education

Indian Institute of Science Bangalore

Ph.D. (Sc) in Materials Research

August 2021 – Present

CGPA: 8.80

Indian Institute of Technology Bhubaneswar

Bachelor of Technology (Honours) in Metallurgical and Materials Engineering

July 2017 – July 2021

CGPA: 9.07

Experience

Indian Institute of Technology Bhubaneswar

Project Assistant

June 2020 – August 2020

Bhubaneswar, Odisha

- Worked on a consultancy project: "A Model-Based Decision Control and Support System for Accretion control to increase the production of Sponge Iron to the target annual capacity"

Indian Institute of Technology Roorkee

Summer Research Intern, Spark 2020

May 2020 – June 2020

Roorkee, Uttarakhand

- Modeled grain boundary segregation of impurities in Zinc Oxide using Metadise package

Tata Steel Long Product Limited, Joda

Summer Trainee

May 2019 – June 2019

Keonjhar, Odisha

- Worked on building and testing an expert application for on-line dynamic process control of rotary kilns to increase productivity and kiln life

Projects

Exploration of Quantum Defects in Silicon Carbide | VASP, Python, Bash script

January 2022 – Present

- Obtained the ground state properties of Silicon carbide using hybrid functionals and studied charge transition levels, electronic structure and optical properties of different intrinsic and extrinsic defect in SiC

Epilepsy Detection in EEG Signal | Python, NoLiTSA, MNE, Tensorflow

July 2019 – May 2021

- Used nonlinear time series analysis tools along with machine learning to detect epileptic seizure in collaboration with AIIMS Bhubaneswar (Part of the work presented in International Statistics Congress 2019 at Turkey)

Guided Project Based Course | Python, Flask, JavaScript, Keras, OpenCV, scikit-learn

August – November 2020

- From Coursera: Web App Development with Python and Flask, Sentiment Analysis with scikit-learn, Anomaly detection in time series with Keras, Computer Vision with OpenCV and Python, Facial Expression Recognition with Keras

Publications

- Meher, S., Choudhary, P., Vempati, V. S., Deo, B., and Chattopadhyay, P. (2020). Dynamic quality prediction and control in rotary sponge iron kilns. *IOP Conference Series: Materials Science and Engineering*, 872(1):012077
- Sahu, K. K., Meher, S., Menon, A. M., Sridhar, M., Harsha Vardhan, G. V., Pandey, S., Kumar, A., and Das, S. (2022). Artificial Intelligence and Machine Learning: New Age Tools for Augmenting Plastic Materials Designing, Processing, and Manufacturing. In *Encyclopedia of Materials: Plastics and Polymers*, pages 127–152. Elsevier

Relevant Courses

- Computational Modeling of Materials
- Symmetry and Structure in Solid State
- Quantum Mechanics
- Thermodynamics and Statistical Mechanics
- Elements of Electroceramics
- Numerical Methods
- Tensorflow for AI, ML and DL
- Neural Network and Deep Learning

Workshops and Schools

- Qiskit Global Summer School 2022 (Online)
- Accelerated Computing with CUDA (Online)
- Quantum Computing and Simulation for Energy Materials (2023, FZ Juelich, Germany)

Technical Skills

Languages: Python, C/C++, Fortran, HTML/CSS, JavaScript, MATLAB, Cython

Software: VASP, Quantum Espresso, Metadise, Adobe Illustrator, VESTA, XCrySDen

Technologies/Frameworks: Linux, GitHub, WordPress, MongoDB

Related Libraries: ASE, Pymatgen, Phonopy, Automate, FireWorks, Custodian, NumPy, CoFFEE

Honors and Awards

- Prime Minister Research Fellowship (Aug 2022, IISc)
- Qiskit Global Summer School - Quantum Excellence Badge (2022, IBM)
- Certificate of Excellence in Accelerated Computing with CUDA (2022, C-DAC Pune)
- Certificate of Appreciation for Invaluable Contribution (2020, TSLPL, Joda)
- First Runner-up in Tata Motors MindRover Season 7 (2019, TATA Motors)
- Second Position in BETic Innovation Challenge in 7th Inter IIT Tech Meet (2018, IIT Bombay)
- State Level Rajiv Gandhi Pratiba Puraskar (2013, Rajiv Gandhi Students' Forum, Bhubaneswar)