SOVESH MOHAPATRA

soveshmohapa@umass.edu ♦ +1 (857) 389 - 8786 ♦ github.com/soveshmohapa

Education

University of Massachusetts Amherst, USA   May 2023
Bachelor of Science in Computer Science, Mathematics; Bachelor of Arts in Linguistics (GPA: 3.8/4.0)
Relevant Courses: Data Structures and Algorithm, Natural Language Processing, Discrete Mathematics, Computational Linguistics
Honors: Chancellor's Award, Dean's List, IALS Core Intern (Top 0.1% undergraduate students)

Professional Experience

UMass Amherst Department of Biomedical Engineering, *IALS Core Intern*   2021 - Present
- Investigated effects of brain stimulation on the brain structure (connectivity, fractional anisotropy, and diffusivity) using image analysis software (SPM12, FSL) for diffusion tensor images of 50 patients.
- Studied the effects of brain stimulation on the real time functional connectivity changes in the brain circuits using the fMRI image analysis of 70 patients.
- Developed neural network models to predict the brain lesions in T1w, T2w and fMRI images with model's test loss at -0.8943.
- Developed machine learning models for prediction of the fMRI signal.

Massachusetts Institute of Technology CSAIL, *UROP Intern*   Summer 2021
- Developed machine learning models (Accuracy: 78%) to classify the different sentimental level of sentence.
- Built DL model to generate language descriptors (60% human understandability) from the visualizations.

Indian Institute of Technology Roorkee, *Research Intern*   2018 - 2020
- Repurposed drugs for the treatment of COVID-19 (Accuracy: 78%) and Chagas disease (Accuracy: 81%) by using classification models based on pharmacophore fingerprints.
- Built regression model (RMSE: 0.92) to predict quantum efficiency of solar cells using in-house data.

Selected Publications and Conference Proceedings

- **Mohapatra, S.**, et al., A deep learning approach to identify the lesions in the brain, (2022) [Extended Abstract]. (Submitted to Machine Learning in Medical Imaging, ACML 2022) (link)
- **Mohapatra, S.**, et al., Sentiment is all you need to win US Presidential elections, (2022). NLP4DH, AACL-IJCNLP 2022 (link)
- **Mohapatra, S.**, et al., A machine learning approach to identify the engagement of a brain network targeted by non-invasive brain-stimulation, (2022). (In review at PLOS Computational Biology) (link)
- **Mohapatra, S.**, et al., The (In)Effectiveness of Intermediate Task Training for Domain Adaptation and Cross-Lingual Transfer Learning, (2022). (Submitted to KnowledgeNLP-AAAI'23 workshop) (link)
- **Mohapatra, S.**, et al., Using machine learning techniques to predict local brain engagement of noninvasive electrical stimulation, (2021). UMass IONs Poster Conference. (link)
- **Mohapatra, S.**, et al., Repurposing Therapeutics for COVID-19: Rapid Prediction of Commercially available drugs through Machine Learning and Docking, (2020). PLoS ONE. (link)
- **Mohapatra, S.** & Satapathi, S., Magneto-Dielectric Hyperthermia Therapy for Adenocarcinoma, MRS Spring Meeting (2019): 560479 - Oral Presentation
- **Mohapatra, S.** & Satapathi, S., Inorganic Halide Perovskite Single Crystal—Growth Mechanism, Structural and Optical Properties, MRS Fall Meeting (2019): 3278080 - Poster Presentation
- **Mohapatra, S.** & Babel, S., A Critical Review on Machine Learning Algorithms, and their Applications in Pure Sciences, (2019) Research Journal of Recent Sciences. (link)

Leadership Experience (selected experiences at UMass Amherst)

Brett and Brooks Cluster Residents Association, *Resident Assistant*   2021 - Present
- Managed $2,000 for 20 residents, with expenditure for in-person/virtual social and sports events, subscriptions, and facility planning.

Anti-Racism/Bias Training Committee, *Member*   2021 - Present
- Prepared training module (5 hours) based on understanding different incidents of racism happening around and ways to handle for the joining resident assistants and peer mentors.

Technical/Language skills

Languages: English (Speak, Read, Write), Hindi (Speak, Read, Write), Odia (Speak, Read, Write)
Programming/Scripting Languages: Python (Machine Learning using TensorFlow/Keras, PyTorch), LaTeX, Java, Java Script
Software Packages: Origin, MATLAB, COMSOL, SPM12

Extra-Curricular Achievements

- Best Finance Hack at HackUMass IX – Project Titled - *Emotions Manipulate the Future*   2021
- President of India Medal for Exceptional Performance in the field of Innovation.   2016
- YONOSBI20under20 for being the best scientist and author under the age of 20 in India.   2019
- Three times TEDx Speaker (TEDxNITSrinagar | TEDxRamjasCollege | TEDxManipal).   2018, 2019

Interests

Sports - Soccer: UMass Intramurals, Table Tennis: UMass Intramurals