Sumukh **Vasisht Shankar**

Boston, Massachusetts, USA

✉ vasishtshankar.s@northeastern.edu | ⌂ www.svs.codes | ⌥ sumukh-vasisht | in sumukh-vasisht-s

Education

Northeastern University   *Boston, MA, USA*
MASTER OF SCIENCE IN DATA SCIENCE   *Aug 2021 - May 2023 (Expected)*
- CGPA: 4.00/4.00
- Courses: Supervised and Unsupervised Machine Learning, Master's Research, Algorithms, Data Management and Processing

National Institute of Engineering   *Mysore, India*
BACHELOR OF ENGINEERING IN INFORMATION SCIENCE   *Aug. 2017 - Aug 2021*
- CGPA: 9.02/10.00
- Courses: Artificial Intelligence, Machine Learning, Information Retrieval, Big Data, Finite Automata, Recommender Systems, DBMS

Research Experience

Northeastern University - Khoury College of Computer Sciences   *Boston, MA*
RESEARCH APPRENTICE   *July 2022 - Present*

Working on 'Equivariant Neural Networks for Spatial Light Modulator Control' under the guidance of Professor Robin Walters. I am studying the symmetries of the underlying physics of fluid dynamics and optics for a temperature controlled SLM. This knowledge is being used to build an equivariant neural network that directly incorporates physical priors into the model enabling it to learn from less data.

Northeastern University - Khoury College of Computer Sciences   *Boston, MA*
RESEARCHER   *Jan 2022 - Aug 2022*

Under the supervision of Professor David Choffnes and Dr. Alexander Gamero-Garrido, I worked on the project - 'Measuring Privacy Implications of Data Localization with Internet Routing'. I designed, collected, and analyzed Internet measurement campaigns that illuminate data localization practices in the European Union. Implemented working PoCs for various research papers and integrated all of them to collect and analyse the data needed for our use case.

Network Science Institute - Lazer Lab   *Boston, MA*
DATA SCIENCE ENGINEER   *Nov 2022 - Present*

Implementing and monitoring scalable data pipelines to identify and characterize social behaviour from social media data (Twitter). Working on the classification of tweets into Misinformation/Disinformation and creating Misinformation Dashboards for various events under the supervision of Professor David Lazer and Dr. Jason Radford.

Antriksh Labs Pvt. Ltd.   *Mysore, India*
ARTIFICIAL INTELLIGENCE RESEARCHER   *Feb 2020 - Dec 2020*

Initiated active methodological research practices for identifying best visualization techniques for structured and unstructured data. Designed and developed intelligent Data & ML pipelines for an AutoML SaaS product.

Work Experience

Walmart Inc.   *Dallas, TX*
DATA ENGINEER III INTERN   *May 2022 - Aug 2022*

Worked on an initiative to generate real time reports on Walmart+ Customer data, focusing on the store signups. Built near real time data streaming pipelines with Spark and Kafka to stream click data to Google Cloud Storage and generate reports & dashboards on Looker.

FICO   *Bangalore, India*
SOFTWARE ENGINEERING INTERN   *Jan 2021 - Jun 2021*

Implemented and integrated a Regular Expression Validation feature for a Decision Management Platform tool. Wrote various APIs to convert data from one form to another for effective storage in various kinds of databases. I managed to increase the code coverage of the project by more than 11 percent through regression testing.

Deshik Labs *Mysore, India*

Software Intern *Mar 2019 - Oct 2019*

Designed and developed apps for various clients. Experienced with the full cycle of software product development and testing. I developed the entire front-end of a website for a tattoo parlor and contributed towards the development of a Progressive Web Application for a foundry.

Publications

Pre-Prints

In prep. **Emperically Measuring Data Localization on Internet Routes**, Alexander Gamero-Garrido, Kicho Yu, Sumukh Vasisht Shakar, Sindhya Balasubramaniam, Alexander Wilcox, David Choffnes. *Boston, MA*

Privacy Enhancing Technologies Symposium (PETS) - 2023

Honors and Awards

2022 **Apprenticeship**, Khoury College of Computer Sciences *Boston, MA*
Awarded with a fully funded research project for the Fall 2022 semester.

2020 **Speaker**, International Conference of Human-Wildlife Conflict Mitigation *Mysore, India*
Was one of the 20 speakers selected from around the world. Presented my case study on the deteriorating conditions of a lake in my neighborhood and the ways to avoid it and improve the ecology of that area. My article was published in the proceedings of the conference.

2020 **Global Nomination**, NASA SpaceApps Challenge 2020 *Mysore, India*
for the project 'Automated Hazard Detector'.

Teaching

National Institute of Engineering *Mysore, India*

Data Analytics, IS0450 *Fall 2019*

Taught my peers the different types of Recommender Systems and helped them develop one by taking classes over the course of a week under the guidance of Professor C K Vanamala.

NIE IEEE Computer Society *Mysore, India*

Game Development with Python - Resource Person *Fall 2019*

I was the resource person for a 1-day workshop for a technical fest - Rubix 2019. I taught the ways of game development using Python and helped the attendees develop about 6 games.

NIE Summer of Code (NSOC 6.0) *Mysore, India*

Lead Resource Person *Summer 2019*

Taught PWA development and Data Mining to over 50 students over the course 7 sessions.

NIE IEEE Student Branch, Mysore *Mysore, India*

Software Focus Group Lead Teacher *Spring 2019*

Lead teacher for the semester long focus group sessions (about 12 sessions in total). I taught the ways of Web Development with HTML, CSS, JS and Python - Flask.

Academic Projects

Classification of Movies into Genres through Analysis of Posters using CNN (DS5220 - NEU) Developed well performing custom CNN models that identifies the movie genre conveyed by its poster. The CNNs were built with sigmoid activation function along with RMSProp and ADAM optimizers.

Automated Dust Storm Detector using Deep Neural Network Used Image Processing and Deep Neural Network model to detect dust storms using satellite image data through the usage of Stacking Ensemble using Deep Neural Networks to train satellite images to predict whether the input image is a dust storm or not. Layered data such as aerosol index and dust score were considered. The image was also passed through a K-Means segmentation model to estimate the areas affected by the dust storm. NLP was also used to extract possible mentions of locations from social media and predict dust storms in the requested area.

Facial Recognition Based Smart Attendance System (Major Project - NIE) Developed a facial recognition algorithm using Deep Learning model and Extended Binary Patterns Histogram algorithm. The model developed achieved high accuracy (>95%) for both facial detection and recognition aspects of the software. Built an end-to-end software which maintained attendance in a central database along with the application. This slashed down the time taken by professors to mark attendance in a typical classroom setting by more than 50%.

Identification of Social Issues of India through Analysis of Twitter Data (Minor Project - NIE) Initiated an attempt to identify the social issues that the citizens of India are facing on a day to day basis using data from Twitter and concepts of SML and NLP. Developed detection and multi class classification algorithms for complaints made on Twitter.

Community

2022	**Career Peer Advisor**, Khoury College of Computer Sciences First ever CPA to support the MSDS Align population across the NU network.	*Boston, MA*
2020	**Student Ambassador**, IEEE Xtreme 14.0 Student Ambassador to one of the largest competitive programming contests in the world. Organized a series of sessions to advice the students of my college's IEEE Student branch on the best practices of CP.	*Mysore, India*
2020	**Organizer**, Biblus - 2020 One of the organizing members of Biblus 2020 - A national level paper presentation competition held at NIE, Mysore.	*Mysore, India*
2019-20	**Student Activities Committee Coordinator**, NIE IEEE Student Branch Oversaw various activities of the organization having over 300 members, including panel discussions, mock interviews, advising & workshops and co-ordinated with companies and arranged Industrial Visits.	*Mysore, India*
2019-20	**Teaching Volunteer**, U&I Volunteerd at an NGO for almost an year to teach Mathematics and English to underprivileged children on the weekends.	*Mysore, India*
2019-20	**Website Committee Convener**, TechNIEks 2019 & 2020 Was a part of the committee that developed websites for the college's techno-cultural fest techNIEks in 2019 and 2020.	*Mysore, India*
2018-19	**Student Branch Networking Coordinator & Digital Design Lead**, NIE IEEE Student Branch Oversaw the outreach efforts of the student branch through media (print & web).	*Mysore, India*

Skills

Languages	Python, R, C++, C, HTML, CSS, Javascript
Database	MySQL, PostgreSQL, Google Firebase, Mongo DB
Data Science	Supervised and Unsupervised Machine Learning, Deep Learning, Neural Networks
Data Engineering Tools	Spark, Hadoop, Kafka, Looker, Tableau, HDFS, Zookeeper
Others	Angular, React, Node.js, Vue.js, Git