

# Usha Vudatha

Stony Brook, NY (Open to Relocate)

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## EDUCATION

**Master of Science in Computer Science**, *SUNY - Stony Brook University*; GPA: 3.8/4.0

Jan 2022 - May 2023

**Bachelor of Technology in Computer Science**, *Vel Tech University*; GPA: 4.0/4.0

Jul 2017 - Jun 2021

## EXPERIENCE

### Graduate Teaching Assistant

Stony Brook, NY

*Stony Brook University*

Aug 2022 - Dec 2022

- Conducted collaborative and interactive sessions for 150 students, fostering their proficiency in Data Structures and Algorithms
- Mentored various teams, facilitating the development of their problem-solving skills and achieving 95% satisfaction rate
- Maintained a dedicated website with research materials and resources, catered to both technical and non-technical audiences

### Software Engineer

Hyderabad, India

*Sperry Technologies*

Jan 2021 - Jan 2022

- Revolutionized the performance and scalability of complex application by integrating PyYAML files for efficient sentiment prediction improving the accuracy from 60% to 92%. Architected and implemented NLP model using libraries nltk, PyYAML
- Initiated thorough code reviews, debugging, unit test and troubleshooting efforts with the use of tools such as JIRA and Git, resulting in continuous improvement and system stability, enhanced user experience and customer satisfaction
- Deployed a sentiment analysis model with an F1-score of 0.92 using Flask and Docker in a production environment
- Utilized Agile methodology to facilitate cross-functional collaboration & gather requirements

### Software Engineer Intern

Hyderabad, India

*Sperry Technologies*

Aug 2020 - Jan 2021

- Developed a diabetic level monitoring model, using ETL processes to retrieve in-depth information, resulting in 89% accuracy
- Integrated RESTful API services to enhance data privacy and security, yielding a 30% improvement
- Achieved a cost reduction of 25% in healthcare expenses by reducing unnecessary tests and treatments

## PUBLICATIONS/ACCOMPLISHMENTS

- Published *Aspect Based Sentiment Analysis Using Rule Based Approach* in 2021 First International Conference on Advances in Computing and Future Communication Technologies. The findings were disruptive technology for the social media monitoring
- Published *Linear Attribute Distribution and Performance Assessment for Absenteeism at Work using Machine Learning* in 2019 International Journal of Recent Technology and Engineering. The findings led to the optimization of workforce management
- Recognized as a top performer in the HackWithINFY'20 Coding Competition among 167,000 participants

## PROJECTS

### Absenteeism at Work using Machine Learning | *Machine Learning*

- Performed feature scaling, fitted data to 8 different regression models to predict number of absent hours. Achieved the effective prediction using Passive aggressive regressor with minimum MSE 0.04, MAE 0.16, EVS 0.03
- Deployed the regression models in a production environment using cloud technology(AWS) to reduce the cost by 40%

### Kaggle DataScience and Machine Learning Survey | *D3.js, Python, Flask, HTML, CSS*

- Utilized RESTful API for streamlined data retrieval & responsive dashboard, achieving a 90% reduction in manual tasks
- Designed an interactive dashboard with advanced visualization techniques on kaggle survey data using D3.js and Flask

### DNS resolver with DNSSEC | *Python*

- Expertly navigated complex computer network to create DNS Resolver using dnspython resulted in 30% faster response. User device repetitively queries returned IP address starting at the root to the corresponding name server using UDP requests
- Demonstrated innovative use cases by implementing added-security to DNS(DNSSEC) with public-private key encryption techniques using ZSK, KSK, RRSET, resulting in a 99.9% successful validation rate of signed DNS queries

### Renewable Energy Prediction using Deep Learning | *Python, Matplotlib*

- Analyzed complex data, effectively observed energy usage and production from 4 sources, retrieved key consumption patterns
- Leveraged a cutting-edge Time series forecasting model to make highly accurate predictions on renewable energy consumption using Multi-step multi variate LSTM algorithm for the USA, Australia, UK and achieved a remarkable accuracy rate of 88%

### Asynchronous Queuing System | *C, Linux*

- Designed and implemented a Loadable Kernel Module(LKM) which performed various operations like deletion, encryption, decryption, concatenation, compression and decompression on multiple files in the form of a system call

## TECHNICAL SKILLS/STRENGTHS

**Skills** Python, Java, HTML, CSS, SQL, React, C, Javascript, Flask,  $\text{\LaTeX}$ , C++, Linux, Windows, Unix Command line

**Tools & Technologies** Tableau, VSCode, AWS, Azure, PyTorch, TensorFlow, Eclipse, Pandas, Numpy, Scikit-learn, Git, Jira, Spring boot, Splunk, Agile, GCP, NLTK