KUKKALA VAISHNAVI

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PROFESSIONAL SUMMARY

Master's student in Data Science with 2 years of research and practical experience in IT and Data Science. Demonstrated proficiency in programming languages such as Python, C#, java, statistical modeling, and SQL. Strong track record of research contributions like Brain tumor analysis in medical sector, plagiarism detection model and other projects in data science, computer vision, computer science, electronics and communication engineering, showcasing advanced problem-solving abilities and technical expertise. Eager to leverage cutting-edge machine learning and data science methodologies to address complex challenges in medical and manufacturing industries. Actively seeking opportunities to translate academic research into impactful solutions in a dynamic, data-driven environment.

CORE COMPETENCIES:

Data Science & Machine Learning: ▪ Statistical Analysis ▪ Predictive Modeling
Programming & Tools: ▪ Python ▪ C# ▪ Java ▪ C ▪ .Net/.Net Core ▪ SQL ▪ Ansys HFSS ▪ HTML ▪ CSS
Research & Analysis: ▪ Data Science Pipelines
Data & AI Product Management: ▪ Business Planning ▪ Product Lifecycle Management ▪ Cross-functional Collaboration

EDUCATION

Tagliatela College of Engineering, University of New Haven ▪ West Haven, CT May - 2025
Master of Science in Data Science

- **Coursework:**
  ▪ Machine Learning ▪ Computer vison ▪ Power BI ▪ Deep Learning ▪ Natural Language Processing (NLP) ▪ Leadership in Data & AI Products ▪ Artificial Intelligence ▪ etc.
- **Research Assistant:** Aug 2024 – May 2025
  ▪ Brain Tumor detection and classification using ML and DL: Contributed to the Medical industry, conducting research on Brain Tumor using advanced statistical methods and machine learning, deep learning techniques. Collaborated on innovative findings in MRI's and tumors in brain, co-authoring paper on data enhancing and data modelling. Assisted in developing research methodologies and analyzing large datasets.
- **Teaching Assistant:** Jan 2025 - May 2025
  ▪ Machine Learning: Assisted in teaching courses on Machine Learning, guiding students in topics such as statistical modeling, machine learning, and coding best practices. Providing individualized feedback to enhance students' understanding of algorithms and improve coding efficiency. Supported course material preparation and led group discussions.
- **Tools:**
  ▪ Python ▪ SQL ▪ TensorFlow ▪ Hadoop ▪ Tableau ▪ AWS Athena
- **Achievements:**
  ▪ Graduate Dean's Scholarship

Tagliatela College of Engineering, University of New Haven▪ West Haven, Connecticut, USA
Master's in data science ▪ Dean's Scholarship

Vardhaman College of Engineering, Jawaharlal Nehru Technological University ▪ Hyderabad, Telangana, India
Electronics and Communication Engineering ▪ Telangana ePASS Scholarship ▪ National Means cum Merit Scholarship
▪ Vardhaman Student Satellite Mission Objective Contest - Issued by IEEE MTT CHAPTER, Jul 2019
▪ Appreciation certificate from Vardhaman College of Engineering for winning 1st price in "VERVE-The Project Expo 2022"

PROFESSIONAL EXPERIENCE

Ecolab Digital Center ▪ Bengaluru, Karnataka, India Jul 2022–Jul 2023
Associate Software Engineer, RK and DAAS

- Successfully migrated a vital Data Egress module for RK customers, overseeing the project and seamlessly transitioning all customers to the new solution with OIP.
- Proactively learned OSI PI technology, efficiently addressing resource gaps and swiftly handling all related requests.

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- Identified solutions and swiftly facilitated onboarding for successful outcomes upon the arrival of the PI resource.
- Contributed to ECOLAB3D, a cloud-driven digital platform designed to gather data from Ecolab's process control systems, IoT-enabled monitoring solutions, and other integrated systems. The platform generates real-time alerts, streamlines plant operations, and provides performance benchmarking across multiple company locations.
- The technologies utilized include the .NET Framework, Azure Event Hubs, Azure Service Bus, Function Apps, Web Jobs, Table Storage, Azure SQL, Blob Storage, Cosmos DB, and Angular.

Cognizant ▪ Hyderabad, Telangana, India Feb 2022–Jul 2022

Programmer Analyst, Automation Testing, Java, QA

- Developed software modules using Java, contributing to a 20% improvement in application reliability.
- Participated in code reviews and pair programming sessions, enhancing code quality and team collaboration.
- Gained proficiency in Agile methodologies by actively participating in sprint planning, daily stand-ups.
- Tested internal products and web pages for functional and UI quality using Selenium, Java, and SQL.
- Ensured adherence to quality standards through comprehensive testing across various aspects.

DATA & AI PROJECTS

University of New Haven ▪ West Haven, CT Jan 2025–Present

Master of Science in Data Science/Tagliatela College of Engineering

- **Design and Implement a Data Engineering Pipeline** – Developed and deployed a scalable data pipeline on AWS cloud platform. Utilized tools such as Python, SQL, Cloud Services, e.g., AWS Glue, S3, etc.
- **Capstone Project: Brain Tumor Detection and Classification using ML and DL techniques** – Detecting and classifying brain tumors using various ML and DL techniques like Vision Transformers, Inception V3, Mobile Net, Rest Net etc. My major focus is on image enhancement techniques that include histogram equalization. Performed manual annotation and modelling using Python, SQL.

Plagiarism Detection using Transformers ▪ West Haven, Connecticut Oct 2024– Dec 2024

Team Leader, University of New Haven/Data Science/NLP

- Plagiarism detection is a significant challenge in academic and professional contexts. This project leverages cutting-edge transformer-based models to accurately detect plagiarized content, including verbatim copying, paraphrasing, and semantic rewording.
- Key models evaluated include BERT, RoBERTa, T5, and a BERT+LSTM hybrid, trained and fine-tuned on plagiarism-specific datasets.
- Best Overall Model: BERT, achieving 85.87% accuracy and 85.90% F1 scores on both datasets (MRPC and SNLI).

OBJECT DETECTION USING YOLOv5s ▪ West Haven, Connecticut Aug 2024– Dec 2024

Team Leader, University of New Haven/Data Science/Deep Learning

- The objective of this project is to fine-tune a YOLOv5 object detection model to detect and classify two specific object categories (Trees, Lights) in a custom dataset.
- YOLOv5's architecture allows for faster training and inference times, making it highly suitable for detecting multiple objects in diverse scenes with limited data. Post training, we achieved 65.8% precision, 69.6% recall, mAP@0.5 was 67.1%, mAP@0.5:.95 was 32.3%.
- The dataset was collected at the University of New Haven.

Weather Classification using Deep Learning Sep 2024 – Dec 2024

Team Leader, University of New Haven/Data Science/Deep Learning

- Classify weather conditions into 5 classes: Rainy, Sunrise, Cloudy, Foggy and Shine.
- Initially built a custom CNN with 3 convolutional layers. Performed optimization & hyperparameter tuning. Achieved 94% accuracy.
- Performed transfer learning with a pre-trained model ResNet18 and achieved 96% test accuracy and 94% validation accuracy.

Analyzing Trending YouTube Videos using AWS Mar 2024 – Apr 2024

University of New Haven/Data Science/Distributed and Scalable Systems

- We used the data from YouTube data API and made use of AWS cloud services to create an ecosystem for analyzing YouTube videos.

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- Developed a personalized content recommendations based on individual viewer preferences and viewing history to improve retention.
- Incorporated sentiment analysis techniques to analyze viewer comments and feedback.

Email spam detection using Machine learning algorithms Aug 2023 – Dec 2023

Team Leader/University of New Haven/Data Science

- Data was collected from Kaggle that contains 5572 records of 2 columns "message, category".
- Compared various ML techniques like Logistic regression, Decision tree, KNN, Random Forest, Stacking model.
- Stacked model (STACK) was a strong performer across multiple metrics, including 98.5% accuracy, 98.7%precision, 99.5%recall, and 99.1% F1 score.

Speech Recognition using Hidden Markov Models Oct 2023 – Dec 2023

University of New Haven/Data Science/Artificial Intelligence

- Data was collected from GitHub that contains an audio folder having 15 sub folders with 15 respective audio files in .wav format.
- Used short term Fourier transform for feature extraction, Acoustic model used by recognition system to recognize speech, Decoding Search with Viterbi algorithm to find the most likely sequence of states that generated the input.
- HMM was the best among all modeling techniques as it increases recognition accuracy and speed.

PUBLICATIONS

- K. Vaishnavi; Sulakshana Chilukuri; Y. Pandurangaiah. (2022). Miniaturized Planar Dual Band Monopole UWB Antenna using Capacitively Loaded Loop Resonator with Notch Characteristics. IEEE. WAMS 2022.Jun 2022

PROFESSIONAL CERTIFICATIONS & MEMBERSHIPS

Computer Vision course	*ineiuron.ai*	01-01-2025
Python for Data Science	*IBM*	May 2023
AI, ML, IIoT	*National Instruments and Cognibot*	May 2020 – Jun 2020
Microsoft Azure Fundamentals	*Microsoft*	Oct 2022
Relational Database Design	*Udemy*	Mar 2022
Web Design HTML5 + CSS3	*Udemy*	Feb 2022
Python Programming for Everybody	*Coursera*	Apr 2020
Design thinking for Innovation	*Coursera*	Apr 2020
Treasurer	*IEEE Microwave theory & techniques society*	Jan 2021 – Present
Event coordinator	*IEEE Circuits and systems society*	Dec 2019–Dec 2020
Member	*University Space Engineering Consortium (UNISEC)*	Jan 2020 – Dec 2020
RF and Antenna design using ANSYS HFSS	*Entuple Technologies*	May 2020 – May 2020
Geospatial Inputs for Enabling Master Plan Formation	*Indian Institute of Remote Sensing (IIRS)*	Jul 2020 – Jul 2020
Satellite Systems Engineering	*Vardhaman College of Engineering*	Aug 2020 – Sep 2020
Design and Analysis of Advanced Antenna Systems	*Vardhaman College of Engineering*	Aug 2021 – Aug 2021

LANGUAGES

English	*English Language Communication Skills*	Jan 2019
Hindi		
Telugu		