Abhishek Revadekar

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EDUCATION

Stony Brook University Stony Brook, New York
Master of Science in Computer Science | GPA: 3.7/4.0 Aug 2022 - May 2024
Coursework: Natural Language Processing, Computer Vision, Probability & Statistics, Databases; Algorithms Group.

University of Mumbai Mumbai, India
Bachelor of Technology in Computer Engineering | GPA: 9.1/10.0 Aug 2017 - May 2021
Coursework: Data Structures & Algorithms, Big Data Analytics, Distributed Systems, Artificial Intelligence.

EXPERIENCE

Stony Brook University Stony Brook, New York
Research Assistant - Operating Systems May 2023 - Present
- Designed an **AFL based TrustZone kernel fuzzer** for the secure world in ARM Trusted Execution Environment.
- Built custom Trusted Applications in C, for OPTEE and tested buffer overflow vulnerabilities using address sanitizers.
- Analyzed kernel image binaries using Angr.io and Ghidra, and studied the **kernel MMU configuration**.

Stony Brook University Stony Brook, New York
Research Assistant - Human Computer Interaction - EyeCanDo Jan 2023 - Dec 2023
- Improved EyeCanDo iOS app's **eye tracking calibration by 56%** with ARKit and OpenCV for homography.
- Performed **extensive task-based trials in controlled environments** on volunteer patients diagnosed with ALS.
- Trained BERT and T5 LLMs on distributed GPU clusters for **phrase-level gesture typing** using CUDA.

BNP Paribas Mumbai, India
Software Engineer Jan 2021 - Jun 2022
- Led critical updates for On-demand Cash Pooling - **enhanced interest consolidation strategy** for 8 enterprise clients valued at over ¥10M, by integrating lending/borrowing limits and automated reporting with secure email notification.
- Initiated effective risk mitigation to attain a **1-week incident resolution and patch delivery** in the Apache Log4j crisis.
- Adopted Agile workflow to develop **data handling APIs in Java**, as well as **migration & structure validation scripts** for 400+ tables in JGestab, supporting form integrity across BNPP's network.
- Created UNIX jobs for **file structuring and SHA-256 validation**, cutting human error and packaging time by 75%.

PROJECTS

NeuroLogic Decoding using a subset of LTL semantics | *Python, PyTorch, Numpy, Pandas, NLTK, Huggingface.*
- Integrated Linear Temporal semantics into Seq2Seq and beam search achieving **18% BLEU score improvement**.
- Enhanced the temporal **order score metric by 24%** and **context coverage score by 11%**.

Attention estimation in students based on body posture | *Python, Tensorflow, Keras, OpenCV, NumPy, Pandas.*
- Trained an attention detection model using body postures, achieving a **92% accuracy on 5 most common poses**.
- Curated a **20,000+ video frames dataset** from student peers, leveraging OpenPose for accurate posture keypoint.

Viral News Coverage Analysis and Prediction | *Python, Tensorflow, Keras, NLTK, Tweepy, FBProphet, NumPy, Pandas.*
- Devised a news retrieval system with custom crawlers and Google News API, using **LDA for topic modeling**.
- Analyzed **social media impact** using Twitter time series data, employing SARIMA to forecast public response trends, and **combined news coverage analysis with social impact** to predict virality, noting a 15% RMSE error.

SKILLS

Languages:	Python, Java, C/C++, Swift, JavaScript, HTML/CSS, Bash.
Frameworks/Libraries:	Flask, Django, PyTest, Spring boot, Maven, JUnit, Node.js, React, Angular, Selenium.
Databases:	PostgreSQL, MySQL, MongoDB, Apache Kafka, Hadoop, PySpark.
Machine Learning:	PyTorch, Tensorflow, Keras, sklearn, Matplotlib, pandas, NumPy, OpenCV, CUDA.
Development Tools:	Git, Jira, VS Code, Xcode, Linux, Docker, AWS - S3, EC2, Lambda, API Gateway.

ACCOMPLISHMENTS

Publications:	5 research papers in Machine Learning · *55 citations* · Google Scholar.
Awards:	*"Best Paper Presentation"* Award - ICCICT 2021 · *"Best Paper"* Award - ICSPC 2021.