ABHISHEK SANTOSH REVADEKAR

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EDUCATION

STONY BROOK UNIVERSITY Stony Brook, New York
Master of Science in Computer Science | Cumulative GPA: 3.57/4.00 **Expected Dec. 2023**
Coursework: Operating Systems, Natural Language Processing, Introduction to Computer Vision, Probability & Statistics.

UNIVERSITY OF MUMBAI Mumbai, India
Bachelor of Technology in Computer Engineering | Cumulative GPA: 9.12/10.00 **May 2021**
Coursework: Data Structures and Algorithms, Database Systems, Networks, Distributed Systems, Software Engineering.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, JavaScript, HTML, CSS, React, Angular, Android, Swift, Scala, Shell scripting.
Frameworks & Libraries: Java - Spring; iOS - ARKit, CoreML; Python - Django, OpenCV, Pandas, NumPy, PySpark.
Databases & ETL Tools: SQL, PostgreSQL, MongoDB, Hadoop, Apache Kafka, Cassandra, WEKA.
Development Tools: Agile, Scrum, JIRA, Git, Xcode, VS Code, Linux, Anaconda, Docker, Kubernetes.

WORK EXPERIENCE

STONY BROOK UNIVERSITY Stony Brook, New York
Graduate Research Assistant - Operating Systems (Advisor: Prof. Dongyoon Lee) **May 2023 – Aug. 2023**
- Conducted cutting-edge research on memory safety within the Trusted Execution Environment on ARMv8 architecture.
- Built a custom Trusted Application in C, on OPTEE-OS and tested memory overflow vulnerabilities using AddressSanitizer.
- Leveraged advanced tools like Angr.io and Dynamo to conduct memory safety experiments on the OPTEE-OS kernel.

BNP PARIBAS Mumbai, India
Software Engineer – Liquidity Management Team **Jun. 2021 – Jun. 2022**
- Led critical feature update for On-demand Cash Pooling involving lending and borrowing limit constraints, leveraging Java-Spring Boot, Oracle SQL, Angular and UNIX jobs and increasing client satisfaction by 30%.
- Automated client report generation, cutting manual effort by 50% and improving delivery time by 35%.
- Streamlined cash pooling project communication and planned 2022 roadmaps in China, reducing misalignment.
- Provided Level 3 support, resolving data patch requests within 1 hour on average and circumventing production failures.

Software Development Intern – ATLAS2 Design and Development Team **Jan. 2021 – Jun. 2021**
- Developed Java-based data handling APIs and migration scripts for 400+ parameter tables in the JGestab application.
- Improved business rule logic in JGestab parameterization tool by analyzing COBOL code, reducing errors by 20%
- Implemented an automated testing script using Selenium-Java to evaluate business rule logic, increasing testing efficiency by 30% and identifying fail cases promptly.

UNIVERSITY PROJECTS

DataSurge: A Distributed, Real-Time Data Pipeline **May 2023 – Present**
- Engineered a modular distributed real-time data pipeline, using Java-Spring Boot, Apache Kafka, Docker and Kubernetes.
- Orchestrated seamless integration of diverse data sources and flexible data model configuration, utilizing separate Kafka topics for scalability and low-latency streaming of 400 events per second and a data load of around 3 GBs per day.

A Lightweight Hypervisor for Linux and VM latency measurement **Feb. 2023 – May 2023**
- Developed a custom Type 2 hypervisor using C and inline Assembly for Intel VT-x, improving virtualization.
- Achieved efficient performance with average VM latency of 600 CPU cycles by executing guest code in Assembly.
- Studied multi-level nested virtualization, observing 45% increase in VM latency on VMWare compared to direct host access.

EyeCanDo - An iOS-based Eye Movement Tracking for HCI Assistance for ALS patients **Jan. 2023 – May 2023**
- Enhanced app calibration accuracy by introducing homography for gaze points using Swift, ARKit and Objective-C++.
- Created a testing module to quantifiably assess the impact of calibration enhancements on eye tracking accuracy, establishing a 20% improvement in calibration precision.
- Trained a PyTorch model, leveraging distributed computing with multiple GPU-enabled servers, for gesture typing for phrases using a BERT-based encoder-decoder network and a custom dataset with over 5 million gesture simulations.

KEY ACCOMPLISHMENTS

- **Publications:** 5 research papers in Machine Learning space (42 citations). Google Scholar: tinyurl.com/AbhiR-GScholar.
- **Awards:** "Best Paper Presentation" award for "Bidirectional Sign Language Translation" - ICCICT 2021 conference; "Best Paper" award for "Pothole Detection using Accelerometer and Computer Vision" - ICPSC 2021 conference.
- **Research Mentor** for the AutoBuddy project in collaboration with Tata Institute of Social Sciences (TISS).