

Aditya Vikram

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Education

Georgia Institute of Technology, Atlanta, GA

M.S. in Computer Science, Specialization: Computing Systems

GPA: 4.0

Aug 2022 - May 2024 (Expected)

- Coursework: Advanced Operating Systems, Graduate Algorithms, Machine Learning Theory, Applied Cryptography, Dynamic Algebraic Algos

Indian Institute of Technology Kanpur, India

B.Tech. in Electrical Engineering, Minor in CSE (Algorithms and Machine Learning)

CGPA: 9.7/10

Jul 2014 - Jun 2018

- Received Academic Excellence Award for outstanding academic performance for academic years 2016-17, 2015-16 and 2014-15
- Relevant coursework: Algorithms-II, Randomized Algorithms, Machine Learning, Natural Language Processing, Probabilistic Machine Learning

Work Experience

Georgia Institute of Technology

Graduate Teaching Assistant

Atlanta, GA, USA

Oct 2022 - Present

- Assisted in teaching CS7641 Machine Learning: clarified doubts, provided feedback to students on the techniques used, evaluated their reports

Adobe Inc.

Computer Scientist - I

Bengaluru, India

July 2018 - Aug 2022

- Received Spot Awards in FY 2019-20 and 2020-21, and a Special Contribution Award in FY 2021-22 for exemplary contributions to critical projects
- Key collaborator in design and implementation of the extensibility platform for Creative Cloud web, aimed at boosting developer engagement
- Implemented a user-facing request-access workflow using React and Redux to enable seamless collaboration in cloud documents
- Designed and implemented a modularization process for an iOS UI library using CocoaPods, reducing multiple Adobe apps' size by 5 MB. Resulted in faster downloads and an enhanced user experience
- Added efficient analytics support for a Universal Windows Platform (UWP) SDK, leading to fixes for 15% of the observed SDK crashes
- Implemented a retry-reconnect mechanism to address the flaky UWP app-service connection, resulting in a 10% reduction in reported crashes
- Optimized performance and launch time of paywalls in an iOS SDK by 50% by caching purchase metadata, resulting in improved response time

Adobe Inc.

Research Intern

Bengaluru, India

May 2017 - July 2017

- Participated in ideation and surveying existing work within the problem area of Virtual Reality (VR) websites, leading to the selection of the problem statement: "Visualizing and designing a navigable interface for a large-scale image gallery on a 360° canvas"
- Formed an image similarity graph from a 150,000 image corpus and implemented a tag-based image search intuitive to VR users. Proposed a novel layout for a VR gallery and implemented it for Samsung Gear VR. The project was showcased at Adobe's TechSummit 2019 in San Francisco

Selected Projects

Projection-free Online Learning: A Review Report]

Prof. Jake Abernethy, Georgia Tech

Course Project: Machine Learning Theory

Apr 2023 - May 2023

- Conducted a survey of methods to overcome the computational bottleneck of the projection step in the Online Gradient Descent algorithm
- Summarized two alternate approaches: the Online Frank-Wolfe and Fast Approximate Projection algorithms, including their key insights, and evaluated them based on metrics like domain assumptions, time complexity and regret bounds

GTStore Report] Code]

Prof. Ada Gavrilovska, Georgia Tech

Course Project: Advanced Operating Systems

Apr 2023

- Designed and implemented a distributed key-value store using gRPC, that provides fault-tolerance by data replication
- Implemented a data partitioning scheme to ensure even load distribution and a heartbeat mechanism for load-balancing on storage failures
- Evaluated the system's throughput and showed that it depends hyperbolically on the number of storage replicas, and proposed optimizations

GTFileSystem: A recoverable file system Report] Code]

Prof. Ada Gavrilovska, Georgia Tech

Course Project: Advanced Operating Systems

Mar 2023 - Apr 2023

- Implemented the GT File System library with the goal of data persistence and crash recovery using in-memory logs and disk logging
- Developed a transaction system allowing commit, abort and flush ops for file writes, and implemented a read API for efficient data retrieval
- Simulated crash scenarios and created a comprehensive test suite with unit and integration tests for near-100% code coverage

TinyFile Service and Client Report] Code]

Prof. Ada Gavrilovska, Georgia Tech

Course Project: Advanced Operating Systems

Feb 2023 - Mar 2023

- Designed the TinyFile service and client library with sync and async APIs for concurrent file compression while adhering to Xen's Dom0 paradigm
- Used System-V IPC and semaphores for synchronization, and shared memory segments for efficient data transfer between service and clients
- Analyzed the impact of number and size of SHMs on the client-side service time, and proposed optimal size (4096-8192) and number (5) of SHMs

Grammatical Error Correction in Sentences Report]

Prof. Harish Karnick, IIT Kanpur

Course Project: Introduction to Natural Language Processing

Jan 2018 - Apr 2018

- Implemented a sequence-to-sequence model in Keras for grammatical error correction in sentences, using LSTMs for encoding and decoding
- Trained the seq2seq model on the NUCLE dataset with sub-sampling, achieving a testing accuracy of approximately 64%, precision of 0.59, and provided recommendations for enhancing correction accuracy

Technical Skills

Languages

C++, Python, TypeScript, Objective-C, JavaScript, Swift, Shell, \LaTeX

Frameworks and Tools

ReactJS, NodeJS, Redux, gRPC, CMake, Cocoapods, Pandas, scikit-learn, TensorFlow, Keras, Git, Docker