ADITYA PRAKASH

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EDUCATION

Emory University   **May 2025**
Master's, Computer Science   *GPA: 3.8*
- Relevant Coursework: Machine Learning, Software Engineering, Cyber Security, Human Computer Interaction

Devi Ahilya University   **Jun 2023**
Bachelor's, Computer Engineering   *GPA: 8.68*

PROFESSIONAL EXPERIENCE

Emory University   **Atlanta, GA, USA**
Software Engineer   *May 2024 - Present*
- Fine-tuned and deployed LLaMA 70B on a Flask server to power an AI-based admissions screening system, automating evaluations for 800+ CS applicants per cycle. Reduced review time by 66% (from ~30 minutes to under 10 minutes per applicant) and saved ~$50,000 annually.
- Developed a faculty management system to track and approve leaves, performance reviews, awards, and tenure progression, streamlining administrative processes for 5,000+ faculty members, using React.js, Remix, and Next.js.
- Designed and implemented automatic grading software in React.js and Node.js for Python and Java assignments, automating grading for 300+ students and reducing grading time by 50% for faculty and TAs.
- Created 30+ reusable components and 90+ webpages for the Emory Computer Science website, later migrating the system to Cascade CMS for easier administrative management. Conducted weekly audits to identify broken links and outdated content while collaborating with stakeholders to enhance design and content.

Watto AI (YC S23)   **Remote**
Software Development Intern   *Jun 2023 - Aug 2023*
- Led end-to-end development of user interface. Developed 24 React.js and Next.js components and Figma designs. Prototyped document hub, forms, outline editor and other core pages with HTML, CSS, JavaScript and TypeScript.
- Pioneered implementation of a real-time outline feature, providing instant feedback, leading to a 58% decrease in revisions.
- Optimized database performance by utilizing MongoDB for efficient NoSQL data storage and retrieval, implementing indexing, sharding, and caching, leading to enhanced backend API performance and seamless data management for user documents.

Rakuten   **Indore, Madhya Pradesh, India**
Software Development Intern   *Jan 2023 - May 2023*
- Improved network reliability by 80% by developing a capacity manager. Wrote 50+ APIs for automation using Python and C++
- Saved over $100,000 in expenses by successfully migrating from OracleDB to MySQL, ensuring seamless integration with Rakuten's existing ecosystems.
- Facilitated database connectivity with Ubuntu through Docker, automating code setup through shell scripts. Developed Python scripts for dummy input generation and database queries, resulting in a 30% reduction in execution time.

PROJECTS

Quantum Circuits in Action: Defending Neural Networks from Adversarial Attacks   **Atlanta, GA, USA**
                                                                                                            Aug 2024 - Present
- Evaluated adversarial robustness on the MNIST dataset by applying diverse attack methods (FGSM, PGD, SINIFGSM, VNIFGSM) using the Torchattacks library on both classical CNNs and Quantum Neural Networks (QNNs).
- Designed and simulated 8 QNN architectures (linear, star, random, and full entanglement etc.) with Cirq, demonstrating that quantum models can exhibit up to 6.25% improved resistance against complex adversarial perturbations compared to baseline CNNs.
- Developed a noise-augmented training strategy (using Salt-and-Pepper and Gaussian noise) that enhanced CNN accuracy by 3–10% and QNN accuracy by 2–6%, significantly bolstering model resilience against adversarial attacks.

Concordance in Machine Learning and Deep Learning for Breast Cancer Screening - *Link to project*   **Atlanta, GA, USA**
Software Engineer   *Aug 2023 - Dec 2023*
- Enhanced tumor detection accuracy to 77% with 91% AUC by fine-tuning ResNet50 and InceptionNetV2 models for breast cancer screening, leveraging Java and Python for model optimization.
- Processed and integrated 5TB of image and clinical data by creating end-to-end pipelines, ensuring seamless system integration and efficient data handling using ETL processes.
- Improved diagnostic prediction by implementing Naïve Bayes, SVMs, kNNs, Decision Trees, and Logistic Regression, enhancing system integration and leveraging SQL for data manipulation.

SKILLS

Programming Languages: C/C++, Java, C#, Python, JavaScript, TypeScript, R, Go, Rust, HTML/CSS
Databases: MySQL, SQLite, PostgreSQL, MariaDB, MongoDB, Firestore, Cassandra, Redis, Stata
Libraries, Frameworks & Tools: Express.js, AngularJS, React.js, Vue.js, Node.js, D3.js, Three.js, jQuery, OpenCV, Git, Spring, JUnit, NumPy, Pandas, Postman, Mongoose, Apache Spark, GraphQL, Next.js, Scikit-learn, SciPy, Tensorflow, LLVM, Redux, Cirq
Additional Skills: Bash, Linux, Kubernetes, AWS, Databricks, Azure, GCP, Agile, DevOps, CI/CD, ServiceNow, Salesforce, Computer Vision, Apache Kafka