Anagha Joshi

preferred name: Anagha (Uh-na-gha)
Austin, Texas
anaghaj489@gmail.com | LinkedIn | Github | Website
706.773.7835

EDUCATION

University of Georgia, Athens, GA, USA **2021**
M.S. Computer Science (3.93/4.0)
Thesis: Interpretable Image Classification (Explainable AI)
Thesis Advisor: Dr. Jaewoo Lee, PhD (https://www.ai.uga.edu/directory/people/jaewoo-lee)

Pune University, India **2015**
B.E. Electronics & Telecommunication Engineering (Grade: First class with distinction)

RESEARCH PUBLICATIONS

- **A. Joshi**, "Revitalizing Language Processing with Intelligent Syntax Repair and Boolean Tensor Completion," *IEEE International Conference on Big Data (BigData)*, Washington, DC, USA, 2024, pp. 5361-5368, doi: 10.1109/BigData62323.2024.10825203.
- **A. Joshi**, "Enhancing Core-Set Active Learning: Unlocking New Frontiers in Text Classification," *2024 International Conference on Natural Language Processing and Information Retrieval (NLPIR '24)*, Association for Computing Machinery, New York, NY, USA, 2024, pp. 62–68, doi: https://doi.org/10.1145/3711542.3711606
- **A. Joshi**, "Interpretable Image Classification," *University of Georgia ProQuest Dissertations & Theses*, 2021. (doi: [1])
- **A. Joshi,** M. Kulkarni, "Analysis of Fractal Image Compression Using Quadtree Partitioning", Bulletin of Marine Science & Technology, Volume10, 2015, ISSN: 0974-8474 (published in physical print only)

RESEARCH EXPERIENCE

Independent Researcher **2022-2024**
Project: SynSculpt**:** Boolean tensor completion model for syntax error repair in context-free languages
- Independently developed a Boolean tensor language intersection model that synthesizes and ranks repairs within a fixed Levenshtein distance, achieving 90% accuracy in identifying valid code fixes across languages

Independent Researcher **2022-2024**
Project: Enhancing Core-Set Active Learning for Text Classification
- Introduced dimensionality reduction techniques like t-SNE within Core-Set methodologies, leading to a 2–3% F1 score improvement on diverse datasets
- Uncovered limitations in adapting computer vision-oriented techniques to text data, exemplified by Core-Set underperforming random sampling by 5% in the F1 score on one dataset

Graduate Research Assistant, *Institute for Artificial Intelligence, University of Georgia* **2020-2021**
PI: Dr. Jaewoo Lee
MS Thesis: Interpretable Image Classification
- Independently engineered TPNet, an **interpretable transformer-based image classifier** that reduces complexity compared to existing models, showcasing advanced architectural design capabilities
- Conducted comprehensive **performance evaluations** of **TPNet** against baseline models, demonstrating proficiency in model analysis and experimental methodology in AI research.

Graduate Research Assistant, *AI4STEM Lab, University of Georgia* **2021-2021**
PI: Dr. Xiaoming Zhai
Project: ML-based Text Classification for Enhanced Autograding
- Built ML text classifiers to automate grading tasks, achieving 90% reduction in manual grading time; deployed as a Django web app.

Undergraduate Research Assistant, *Pune University* **2014-2015**
PI: Dr. Milind V. Kulkarni (https://scholar.google.co.in/citations?user=rIAalqEAAAAJ&hl=en)
Project: Fractal Image Compression Using Quadtree Partitioning
- Researched and compared fractal, DCT, and wavelet compression methods for advanced image data reduction.
- Contributed to developing block-based and affine transformation techniques to improve compression efficiency.

[1] MS Thesis pdf: https://esploro.libs.uga.edu/esploro/outputs/9949390565902959

PROFESSIONAL EXPERIENCE

Software Development Engineer, Amazon, Austin, TX **2024-Present**

- Monitor performance and payment systems and analyze large data sets, allowing partners to make intelligent business decisions. (**Splunk, Amazon internal AI tools**)
- Designed and optimized scalable payment APIs at Amazon, ensuring high availability and low latency for mission-critical systems.
- Develop and maintain comprehensive technical documentation, guidelines, and training materials for payment and identity systems.

Software Development Engineer, NCR Voyix, Atlanta, GA **2021-2024**

- **Deployed microservices using Docker** and Kubernetes, ensuring high availability and scalability, leading to a 40% reduction in downtime.
- Modeled on the strangler pattern, I designed, developed, and implemented a **GraphQL API layer** to reduce the load on the database by a factor of 4, effectively replacing traditional REST endpoints and **reducing API response times by 30%.**
- **Led the technical design and integration** of tiered pricing features into **large-scale** Android applications, enhancing point-of-sale capabilities, and supporting a growing customer base
  Impact: 20% increase in product sales
- Wrote **unit and integration tests** using JUnit, JNI, and Mockito to ensure code reliability and maintainability.
  Impact: 20% reduction in production bugs
- Established monitoring, logging, and documentation systems to track the real-time health, performance, and behavior of microservices. (**Splunk** for logging, alerts, and dashboards)

  Environment: Java 11, Spring Boot, React, Node JS, Micro Services, Mongo DB, Kafka, Splunk, Swagger, Sonar, JSON, Gradel, Junit4, Git, Jenkins, Docker, Kubernetes.

Software Development Engineer, ScriptLanes, India **2018-2019**

- Built and maintained responsive web applications with Angular and NgRx, improving page load speeds by 35 percent.
- Optimized performance through code-splitting and lazy loading, reducing load times by 40 percent.
- Improved MongoDB query performance using the Mongo Repository for efficient data access and updates.
- Enhanced cross-device responsiveness with CSS3 and Bootstrap, increasing mobile user traffic by 25 percent.
  Environment: Java 8, JavaScript, TypeScript, Angular, Node JS, Micro Services, Mongo DB, JSON, Junit4, BitBucket.

Co-founder and CTO – Imexzen (Branded as Nixis on Amazon) – India **2016-2018**

- Achieved monthly sales of $1.5K within 12 months by optimizing Amazon PPC campaigns and UX design.
- Successfully grew the business, maintaining a store with over 1K items.

Software Engineer – Softlink International – India **2015-2016**

- **Developed NCDR-certified data registry suite**: Created a comprehensive medical data registry suite using C# and the .NET framework, improving client data management efficiency.
  Environment: C#, .NET Core, JavaScript, jQuery, HTML, CSS, Apache, and MySQL.

SCHOLARSHIP, HONORS AND AWARDS

- **Spotlight Award –** Recognized for leading the development of a cross-functional product knowledge library and fostering teamwork, NCR Voyix Inc. **2022**
- **Graduate Teaching Assistantship:** Data Security and Privacy Preservation (Instructor: Dr. Jaewoo Lee), Computer Networks (UGA, CS dept.) **2020-2021**
- **Best Presentation Award (2nd position)** for a talk titled "Analysis of Fractal Image Compression using Quadtree partitioning," in *Tectonic 2015*, an inter-collegiate technical competition **2015**
- **AICTE** (All India Council of Technical Education [4]) **Undergraduate Scholarship** **2014**

SERVICE & LEADERSHIP

- **Technical Paper Reviewer**, Association for Computational Linguistics (ACL) Workshop on Computational Methods for the Study of Endangered Languages (ComputEL) [5] **2024**
- **Public Relations Chair,** Indian Student Association (UGA) **2019-2021**

OPEN-SOURCE CONTRIBUTION

- Performance Evaluation of ML Algorithms on Fiber and Kubeflow: Used technologies such as Python, Google Cloud Platform, Kubernetes & Kubeflow, Docker, and Uber-Fiber to contrast which cloud deployment tool performed the best. **2018**

[4] https://www.aicte-india.org/
[5] https://computel-workshop.org/computel-8/

PROFESSIONAL ASSOCIATIONS

- **Member,** Women In Technology (WIT) (https://mywit.org) **2024 – Present**
- **Member**, IEEE **2024 – Present**
- **Member,** UGA Institute for Cybersecurity and Privacy **2020-2021**

EXTRACURRICULARS

- **Powerlifting athlete (deadlift 1 RM 200lbs)** **2023**
- **Best Speaker Award,** Entrepreneur Toastmasters Club **2018**
- **Black belt (Dan) certificate in Muay Thai,** a form of martial art **2018**
- **Professionally trained in Hindustani Classical Vocal Singing** ('Praveshika Purn' Level 3 certification) **2008**

COMMUNITY SERVICE

- **Teaching volunteer, Women-In-NCR,** Atlanta, GA **2023**
- **Fundraising volunteer, ASHA Foundation,** Atlanta, GA **2023**
- **Toys for Tots Christmas volunteer,** Atlanta, GA **2022**
- **Mental health awareness volunteer, Manmukti,** a mental health non-profit (UGA), Athens, GA **2021**
- **Raising AIDS awareness volunteer,** Pune **2010**
- **Blood donation camp volunteer,** Pune **2008**

TECHNOLOGY SUMMARY

- **Programming Languages:** Python, Core Java, Java 8
- **ML Frameworks:** PyTorch, Tensorflow, Keras, AWS SageMaker, QuickSight
- **Data streaming Technologies**: Python, Scala, Java, Samza, Kafka, Cassandra, Amazon RDS, DynamoDB
- **Data warehousing and BI:** Amazon Redshift, QuickSight, ETL processes, and data modeling techniques
- **Cloud Services**: AWS (Amazon Web Services), Google Cloud Platform (GCP)
- **Version Control:** GIT
- **Repositories:** Bit Bucket, Git Hub.
- **Dev-ops:** GIT, Jenkins, Docker, JFrog, Kubernetes, Terraform.
- **External Logging:** Splunk, Cloudwatch, DataDog
- **Remote DB:** Mongo Compass, Db Visualizer, MySQL Workbench
- **Agile Methodologies**: Scrum, Jira, Confluence, TDD (Test-Driven Development)
- **CI/CD**: Jenkins, GitHub Actions