

Ashwin Ramesh Kannan

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EDUCATION

North Carolina State University , Raleigh, NC Master of Computer Science	Anticipated May 2026
Courses: Advanced Data Structures, Automated Learning and Data Analysis, Software Engineering	GPA:4.0/4.0
Anna University, College of Engineering , Chennai, India Bachelor of Engineering in Computer Science	June 2024
Courses: Application Development, Operating Systems, Data Structures, Object-Oriented Design, DBMS	GPA:3.7/4.0

SKILLS

Languages: Python, C, C++, Java, Oracle SQL, MySQL, HTML, CSS, JavaScript, Go, C#, R

Tools/Frameworks: React, Node.js, Flask, Firebase, MongoDB, GraphQL, AWS (VPC, EC2, SageMaker), Docker, Git, CI/CD Pipelines, REST APIs, TensorFlow, IntelliJ, Linux, AWS CLI.

WORK EXPERIENCE

SDE Intern – Amazon Web Services (AWS), EC2 ZIM Core Team, Arlington, VA	May 2025 – Aug 2025
• Proposed and developed a GraphQL-based proof of concept for querying EC2 network interface data, reducing payload size by 80% and achieving sub-second latency for complex queries; containerized the service with Docker via RDE and collaborated with the cZIM team for validation and integration; the design is now being adopted for large-scale production integration.	
• Built a dynamic SQL query builder enabling selective field retrieval, optimized joins, and caching strategies, eliminating N+1 query issues and improving database throughput by 25% while ensuring system reliability and maintainability.	
• Benchmarked resolver performance under high concurrency, sustaining 330+ requests/sec with zero data loss, confirming the service's scalability within the AWS Coral framework and distributed microservice environment.	

Student VR Developer, NSF-Funded Research Project, NC State Uni, Raleigh	Dec 2024 – Jun 2025
• Developing VR environments in Unity3D for a \$1.4M NSF-funded project, visualizing exponential scaling with C#.	
• Integrating OpenXR frameworks and procedural generation for Meta for Education, targeting public release in the future.	
• Managing Git version control, optimizing performance with Unity Profiler, and debugging across three project branches.	

Summer Intern, Semiconductor Research Corporation, Chennai, India	Jan 2024 – Mar 2024
• Established outlier detection algorithms (One-class SVM, K-means, and DBSCAN) on 250+ datasets, each containing 100-200 features, improving anomaly detection accuracy by 12% in Analog and Mixed-Signal Circuits.	
• Utilized clustering and predictive modeling techniques to assess performance for high-sensitivity circuits, funded by Texas Instruments & Semiconductor Research Organization. Achieved an accuracy score of 87% from the previous 80%.	

Software Developer Intern, EION, Inc., Chennai, India	Jul 2023 – Sep 2023
• Spearheaded the development of a mobile application for Android using React and Node.js, improving app throughput by 12%, expanding functionality with real-time analytics, and driving 50+ active users during the beta release.	
• Engineered Google Firebase integration for real-time data synchronization, accelerating data retrieval by 15%.	
• Utilized Android Studio for cross-platform development, debugging, leveraging Git for streamlined version control.	

PROJECTS

Memory-Driven Transformer (Medical Imaging, Deep Learning – Python, PyTorch):

Led the development of a system to generate clinically consistent radiology reports using state-of-the-art transformer architecture. Introduced a relational memory module and integrated a pre-trained PubMed BERT model to identify abnormalities. Trained the model using AWS SageMaker's distributed capabilities, achieving superior performance compared to other models by processing a larger dataset of images and reports.

Blogging Portfolio (Web Development – Go, React, Google Firebase, Node.js):

Developed a dynamic personal website with an integrated blog feature. Leveraged Go for backend development and API creation, React for a responsive and interactive user interface, and Google Firebase for real-time database management and user authentication. Implemented Node.js for server-side logic and data handling, resulting in efficient user experience.

LEADERSHIP

President, Theatron – Official Theater Club of Anna University	Jan 2023 – Jun 2024
• Led the theater club, staged multiple plays both in campus and outside campus, attracting 600+ people.	
• Organized 20+ workshops in acting/directing to enhance the core member's skills and engagement of the juniors.	
• Procured funding (3000\$) for competitions, productions, and workshops conducted over a span of 3 years.	
• Contributed to sister clubs from other universities by participating in reach-out programs and media handling.	