

# Kumaran Gowrisankar

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## EDUCATION

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### Texas A&M University, College Station

Master of Computer Science; **GPA: 4/4**

Texas, USA

Aug 2024 – May 2026 (Expected)

### National Institute of Technology, Tiruchirappalli

Bachelor of Technology, Minor in Computer Science & Engineering; **GPA: 3.6/4**

Trichy, India

Jul 2018 – May 2021

## WORK EXPERIENCE

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### slice

Software Developer II, UPI and Payments Team

Bangalore, India

Jun 2022 – July 2024

- Built and deployed UPI-Switch as a middleware system to facilitate real-time payments by integrating with National Payments Corporation of India's (NPCI) UPI network to handle 50 million monthly transactions, ensuring compliance, reliability, and scalability.
- Architected a multi-region payment network infrastructure using Kafka, AWS Transit Gateway and Site-to-Site VPN, to enable active-active failover, ensuring four nines (99.99%) of availability and fault tolerance.
- Led the migration from ECS to EKS, designing and building a production-grade Kubernetes cluster with 100+ instances to support 140+ microservices. Integrated tools like Karpenter for horizontal scaling, ArgoCD for GitOps-based deployment automation, VictoriaMetrics for monitoring, Istio for service mesh, and GitHub Actions Runner for CI/CD automation.

### slice

Software Developer I, Infrastructure and Platform Team

Bangalore, India

Jul 2021 – May 2022

- Designed and developed **Photon**, a declarative tool for managing stateless microservice on AWS Fargate, enabling seamless cloud infrastructure management. Used 150K times in CI/CD pipelines to support 100+ microservices.
- Led initiative to adopt Elastic APM and improve monitoring and troubleshooting capabilities. Leveraged distributed tracing and logs-traces correlation to reduce MTTR for production incidents by 70%.
- Architected a gateway edge proxy service using Envoy to support 5M+ users while ensuring high performance and low latency. Implemented rate limiting using Redis to achieve peak throughput of over 1M requests per minute. Replaced AWS ALBs and Privatelink with Envoy based systems and saved \$100K in annual cloud costs.

### Fidelity Investments

Software Developer Intern

Bangalore, India

May 2020 – Jul 2020

- Devised an application to find, report and fix data discrepancies between Fidelity's data warehouse, *DIPIT* and *ServiceNow*, the IT management SaaS application operated within the company, in 100+ tables.
- Created a scheduled job using ServiceNow Dashboard, which synchronizes the two data sources. The application was deployed and tested successfully in the UAT environment.

## PROJECTS

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### Codecharacter | [Website](#)

- Created an AI programming challenge where players used a high-level API to control troops and battle opponents in a real-time strategy game, attracting 1,300+ participants and over 10,000 matches from 70+ countries.
- Engineered a multi-threaded C++ game engine, implemented character transitions using finite state machines, A\*, and waypoint graph-based path planning for agents, and executed LLVM/Clang compiler passes to enforce instruction counts limits.
- Built a web app with React and TypeScript to handle user registrations, code submissions, and render match simulations with PIXI.js.

### Scholarship Portal | [Website](#)

- Designed and implemented a scholarship portal to simplify application management for students and streamline review and approval for administrators.
- Leveraged Node.js, MongoDB, and Pug.js to support a scholarship portal used by over 2000 students.

## OPEN SOURCE

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### **Xterm.js** | [GitHub](#)

- Resolved transparency issues in the emulator's DOM renderer, ensuring proper rendering and visual consistency.
- Fixed multiple screen rendering issues including Ctrl + Click cursor behaviour and Ctrl + Enter key signal behaviour.

### **Bokeh** | [GitHub](#)

- Improved cursor collision detection for linear Bokeh segments, enhancing accuracy and user interaction in visualizations.
- Add support for querying Bokeh documents with custom selection methods.

## AWARDS & ACHIEVEMENTS

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**Smart India Hackathon Finalist '20:** Collaborated with the Bureau of Police Research and Development (BPRD) to develop advanced visualization and analytical tools to interpret Call Data Records (CDR) and Internet Protocol Detail Records (IPDR) and empowers law enforcement agencies to identify cyber offenders efficiently. | [Github](#)

**Webbed, Vortex '20:** Secured 2<sup>nd</sup> position in a website development competition organized as part of NIT-T's National Computer Science Symposium.

**NIT-T Outstanding Performance Prize:** Awarded to ambitious undergraduate students spearheading campus development initiatives. Presented to me for developing and managing a web portal that enables NIT-T students to manage their scholarship applications.

## SKILLS

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**Programming:** C, C++, Typescript, Node.js, Python, Java, Golang

**Technologies:** Amazon Web Services, Kubernetes, Elasticsearch, Redis, MongoDB, MySQL, Kafka, GitOps, DevOps, React

**Languages:** English (Professional), Tamil (Native), Hindi (Elementary)

## RELEVANT COURSEWORK

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**Graduate coursework:** Analysis of Algorithms, Deep Learning, AI, Distributed Systems and Cloud Computing, Information and Storage Retrieval

**Undergraduate coursework:** Data Structures and Algorithms, Operating Systems, Database Management Systems, Software Engineering, Data Communications and Networks