Madhu **Krishnan**

· Software Engineer · Backend & Distributed Systems ·

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Skills & Qualifications

Languages Java, TypeScript, JavaScript, Python, Go, C/C++, Bash, MATLAB, Haskell, LaTeX

Technologies Postgres, Node.js, gRPC, GraphQL, React, Solr, Kafka, Datadog, Splunk, Kubernetes, Terraform, AWS, Microservices, Git

Work Experience

Uptrust

Software Engineer — *2021 - 2022*

Languages & Technologies: TypeScript, CoffeeScript, GraphQL, Firebase, React, Twilio, AWS Postgres, CircleCI

- Reduced customer attrition by leading technical execution on product features - announcements, recurring events, and multiple staff members.
- Unlocked customer growth by improving system efficiency, increasing messaging throughput, and reducing cross-service communication.
- Enhanced messaging service quality by introducing rate-limiting, at-least-once queue delivery, and backpressure.
- Improved failure incidence and detection by implementing automatic consumer retries, queue alerts, and structured logging.

Salesforce

Senior Software Engineer — *2017 - 2021*
Intern (Core Search) — *2016*
Intern (Service Cloud) — *2015*

Languages & Technologies: Java, Python, Go, gRPC, Solr, EKS, Terraform, PL/SQL, Spinnaker, Jenkins

- Helped achieve optimistic timelines for the public cloud rearchitecture, Hyperforce, by successfully leading a project to eliminate development bottlenecks. Presented the design and results to the CTO and Principal Architects for wider company adoption.
- Reached performance targets for Hyperforce and real-time search suggestions by optimizing backend fanout to reduce tail latencies.
- Improved CTR and Precision@K search metrics in Hyperforce by owning and deploying the ML model execution engine.
- Shortened the development lifecycle by implementing key features for feature-toggling, A/B experimentation, and ML model deployments.

Annai Systems

Software Engineering Intern — *2014*

Languages & Technologies: C/C++, Python, Bash, Make/CMake, OpenSSL EVP, UDP, UDT, NAT Traversal

- Enabled secure transport of genome sequences by encryping UDT, a WAN-optimized application-layer protocol.

Research Experience

Cryptographic Security of Novel Hypermedia Protocols

Undergraduate Researcher — *2016*

- Analyzed the crytographic security of IPFS, a peer-to-peer distributed protocol and application suite. (Paper)

Autonomous Mapping and Navigation

Undergraduate Researcher — *2011 - 2013*

- *Edge-based Crowd Detection from Single Image Datasets* (Published in IJCSI, Vol. 12)
- *Autonomous Mapping and Navigation through Edge-based Optical Flow and Time-to-Collision* (Published in ARPN, Vol. 7)

Education

University of California, San Diego

2012 - 2016

Double Degree (Summa Cum Laude)
B.S. Computer Science
B.S. Applied Mathematics

- Undergraduate Tutor
- Tau Beta Pi Honor Society (Vice-President)

Projects

Competitions

Coolest Hack Einstein Cloud Hackathon | Multi-Armed Bandit Experimentation — *2020*

3rd Place Facebook Hackathon | Reconnect with a Friend — *2014*

2nd Place Intuit Hackathon | Tracking University Dining Allowance — *2013*

1st Place San Diego Science and Engineering Fair | Edge-Detection in Autonomous Navigation — *2012*