Madhu **Krishnan**

· Software Engineer · Backend & Distributed Systems ·

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Education

University of California, San Diego *Sep. 2012 - Dec. 2016*

Double Degree (Summa Cum Laude)

B.S. Computer Science

B.S. Applied Mathematics

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

Skills & Qualifications

Languages Java, Typescript/Javascript, Python, C/C++, MATLAB, Haskell, LaTeX

Technologies Postgres, Node.js, gRPC, GraphQL, Kafka, Message Queues, Solr, Datadog, Kubernetes, Terraform, AWS, Git, GNU/Linux

Work Experience

Uptrust

Software Engineer *Apr. 2021 - Jun. 2022*

- Designed and implemented backend requirements for product features necessary for new and expiring contracts - video chat, announcements, recurring events, and multiple-staff associations.
- Took ownership of the messaging system service and contributed major enhancements for system reliability and 10x scale.
  - Introduced queue alerts, retries, backpressure, and rate-limiting for improved observability and resiliency.
  - Migrated queues away from **Firebase**, and re-wrote data access to use **GraphQL** and **Postgres** for improved tail latencies and throughput.

Salesforce

Senior Software Engineer *Mar. 2017 - Apr. 2021*
Intern (Core Search) *Jun. 2016 - Sep. 2016*
Intern (Service Cloud) *Jun. 2015 - Sep. 2015*

- Worked cross-team to prioritize and perform work necessary to migrate search services to the public cloud architecture, Hyperforce.
  - Lead the implementation for novel "many **Kubernetes** namespaces" solution for search team's developer productivity in order to meet strict company timelines - presented this solution to the CTO and principal architects.
  - Deployed critical **microservices** for search relevancy in the first AWS Hyperforce regions.
  - Designed and implemented performance improvements necessary for the stricter public cloud latency requirements.
- Designed and implemented p50 and p99 latency improvements in legacy services, necessary for the Instant Results product feature.
- Implemented key features for **feature toggling, A/B experimentation**, and the **gRPC execution engine**.

Annai Systems

Software Engineering Intern *June. 2014 - Sep. 2014*

- Built and tested an encrypted high-speed transport service for genome sequencing with **OpenSSL** and **C/C++**.

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)

Projects

Competitions

2020 **Winner of 'Coolest Hack',** Einstin Cloud Hackathon (Multi-Armed Bandit Experimentation)
2014 **3rd Place,** Facebook Hackathon (Facebook Reconnect)
2013 **2nd Place,** Intuit Hackathon (Triton Exchange)
2012 **2nd Place,** Intel ISEF Sweepstakes
2012 **1st Place,** Greater San Diego Science and Engineering Fair