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

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

Technologies Docker, Kubernetes, Terraform, Istio, Postgres, Node.js, gRPC, GraphQL, REST, Message Queues, Solr, Git, GNU/Linux

Work Experience

Uptrust

Software Engineer — *Apr. 2021 - Jun. 2022*

- Designed and implemented a new **queuing system with pg-boss** to improve reliability and fault-tolerance of the messaging system; new features included resilience to dropped messages, automatic retries, and service monitors per queue.
- Rewrote the messaging system with **GraphQL** APIs with backing **Typescript + Postgres** implementations as part of a datastore migration from Firebase.
- Designed improvements including recurring court date events and many staff-to-client associations, and Coffeescript-to-Typescript migration.

Salesforce

Senior Software Engineer — *Mar. 2017 - Apr. 2021*

Intern (Core Search) — *Jun. 2016 - Sep. 2016*

Intern (Service Cloud) — *Jun. 2015 - Sep. 2015*

- Designed and implemented performance improvements in legacy search query execution, leading to **500ms+ improvement** for some customers.
- Led implementation for "many **Kubernetes** namespaces" interim solution for developer productivity in the early days of an AWS public cloud migration. Presented to architects and the CTO to help prioritize an improved development experience.
- Shipped critical MVP features for SQEP, one of the first **gRPC microservices** at Salesforce, used to provide real-time execution of machine learning models.
- Implemented key features to the internal **feature toggling** infrastructure, including database migrations and service alerts.

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