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*

Languages & Technologies: Type/Coffee/Javascript, GraphQL, Firebase, Datadog, Aurora (Postgres), CircleCI

- Reduced customer attrition by contributing to key product features - video chat, announcements, recurring events, and multiple staff members.
- Unlocked more customers by increasing messaging throughput using a new data access layer and optimized cross-service network requests.
- Improved the service quality of messaging by introducing rate-limiting, at-least-once queue delivery, and backpressure.
- Modernized system observability and reduced the failure-rate by introducing queue metrics/alerts, retries, and rate-limiting.

Salesforce

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

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

- Attained optimistic search business timelines for the new public cloud architecture, Hyperforce, by leading the implementation of a novel "many Kubernetes namespace" solution for developer productivity - presented this solution to the CTO and principal architects.
- Achieved performance targets for Hyperforce and real-time search suggestions by optimizing backend fan-out/fan-in with reduced tail-latencies.
- Improved CTR and Precision@K search relevancy in Hyperforce by owning and deploying the machine-learning model execution engine.
- Shortened development lifecycle by implementing key features for feature-toggling, A/B experimentation, and ML model deployments.

Annai Systems

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

Languages & Technologies: C/C++, Bash, Make, UDP, UDT, NAT Traversal

- Unlocked encrypted transport of genome sequences by modifying 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)

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