

# 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++, Bash, MATLAB, Haskell, LaTeX

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

## Work Experience

### Uptrust

SOFTWARE ENGINEER

Apr. 2021 - Jun. 2022

**Languages & Technologies:** Typescript, Coffeescript, GraphQL, Firebase, Twilio, AWS 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.
- 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

INTERN (CORE SEARCH)

INTERN (SERVICE CLOUD)

Mar. 2017 - Apr. 2021

Jun. 2016 - Sep. 2016

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 "many-namespace" solution for developer productivity - presented the design and results to the CTO and principal architects.
- Reached performance targets for Hyperforce and real-time search suggestions by reducing tail latencies with optimized backend fan-out.
- 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

June. 2014 - Sep. 2014

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

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

## Research Experience

### Cryptographic Security of Novel Hypermedia Protocols

UNDERGRADUATE RESEARCHER

2016

- Analyzed the cryptographic 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'**, Einstein 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