

SUDARSHAN MURALIDHAR

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SELECTED WORK EXPERIENCE

Engineering Lead – MongoDB, Inc. – <https://mongodb.com>

December 2020 — Present

New York, NY

- Lead a team of 5 engineers responsible for Device Sync, one component of MongoDB's BAAS (Backend-as-a-Service) offering
 - ❖ Sync is the cloud component of a service that provides seamless synchronization of data across mobile devices and MongoDB
- Helped design and implement Flexible Sync, a major redesign of the sync paradigm allowing for more convenient and expressive usage
- Responsible for design, implementation and delivery of Tiered Sync, a fully on-premise version of Sync that will survive network partitions
- Provide thought-leadership by streamlining processes and optimizing workflows, including handling of error reviews, bug queues, and test infra
- Spoke about Sync at MongoDB World (<https://goo.by/mongodb-world-sync>) and on the Talking Kotlin podcast (<https://goo.by/kotlin>)
- Responsible for hiring, setting team culture, professional and technical growth & development, while remaining very technical and close to code

Cofounder – Upbeat Music, LLC. – <https://upbeatmusicapp.com>

March 2020 — June 2022

- Upbeat was a platform that helped socially-distanced musicians practice and perform together while physically separated
 - ❖ Solved video chat's intrinsic latency problems by enabling musicians to create synchronized performance videos
 - ❖ Started as a side-project during COVID, but quickly found a critical need among amateur musicians and music educators
 - ❖ At peak, experienced regular and around-the-clock usage by 200k users and 5k paying schools across 6 continents
 - ❖ Acquired by MakeMusic in 2022 after being 100% bootstrapped and hitting six-figure MRR in 60 days after launch
- Built a Golang distributed system backend and a React frontend used by tens of thousands of concurrent, non-tech-savvy users
 - ❖ Designed a Golang library around FFmpeg; used it to craft complex audio and video processing pipelines to sync and merge video
 - ❖ Customized and maintained an autoscaling and distributed Jitsi (<https://jitsi.org/>) cluster to handle global, spiky video chat traffic
 - ❖ Implemented devops processes (CI / CD, autoscaling, alerting, etc) to optimize user experience while minimizing support load
- Secured trademark for *Upbeat Music*, and successfully defended it from a Trademark Troll and lawsuit threat
- Ran engineering, accounting legal, and marketing functions. Hired and managed a team of contract developers and salespeople

Senior Software Engineer – Igneous Systems, LLC. – <https://igneous.io>

September 2016 — November 2020

Seattle, WA

- Technical lead for teams of diverse engineers; responsible for architecting solutions and guiding engineers to deliver products effectively
 - ❖ Go-to person for difficult operational issues; investigate and drive team to solutions for arcane bugs and performance concerns
 - ❖ Mentor junior engineers, resolve engineering disputes, drive best practices, scope projects, and help define roadmap
- Engineering owner of *Data Mover (DM)* – engine at the core of all of Igneous's products, processing petabytes / billions of files daily
 - ❖ Started solo on a proof-of-concept; grew it over years into a mission-critical component supported by two engineering teams
 - ❖ Key components include purpose-built NFS and SMB clients, a highly distributed crawler, and efficient diff and copy algorithms
- Co-designed, led implementation on, and was responsible for end-to-end delivery and launch of several versions of *Data Discover*
 - ❖ *DM* service with cloud-based metadata index – scans and provides search and aggregation over billions of files in a few hours
 - ❖ Wrote about it in a series of 5 blog posts: <https://goo.by/billion-files>
- Design and lead cross-team implementation and deployment of new services, including *Replication*, *Direct-to-Cloud*, and *Mixed-Mode*
 - ❖ Help define and fulfill vision of moving data between arbitrary locations and cloud, maintaining efficient local metadata indices
- Co-architected and helped build *Appstack*, a six month long initiative addressing technical debt, laying the groundwork for future growth
- Initial designer and author of *Igneous Customer API*, allowing power users to interact with Igneous applications via automated scripts
- Won *HEATED* award in 2018 for exemplifying company values. Won three of four company hackathons during tenure at Igneous
- Head of the *Ministry of Fun*, the group for organizing social and morale company events. Ran events and worked to improve culture

EDUCATION

University of Pennsylvania – School of Engineering and Applied Science

August 2012 — May 2016

Philadelphia, PA

- Joint MSE in Computer Science, BSE in Networked and Social Systems Engineering (NETS), with minors in Economics and Mathematics
 - ❖ NETS (<https://nets.upenn.edu>) is a multidisciplinary CS program focused on the study of networks and online behavior
- Cumulative GPA: 3.87 / 4.0; Major GPA (all Computer Science/NETS courses): 3.97 / 4.0
- Focus in Algorithmic Game Theory, Distributed Systems, Scalable and Cloud Computing, and Social Networks
- Head Teaching Assistant for NETS212 (Scalable and Cloud Computing) – taught Cloud Computing Fundamentals (AWS, Hadoop, etc.)

PROJECTS

Daruma – 1st Place UPenn Senior Design Competition – <https://sudssm.github.io/daruma>

January 2016 — May 2016

- Daruma solves many of the problems intrinsic to cloud storage by cleverly combining multiple cloud providers. It cryptographically guarantees that cloud providers cannot read, modify, or delete user files, providing stronger privacy than any public option today

TECHNICAL SKILLS

Languages: Proficient: Golang; Strong: Python, Java; Experienced: Shell Scripting, Scala, OCaml, Haskell, Ruby
Web Technologies: Graphic Design, HTML, CSS, React, JavaScript / TypeScript, PHP, SQL, MongoDB, Firebase
Networked Systems / Cloud Computing / Big Data: Hadoop, AWS/GCP/Azure, OpenStack, SaaS Infrastructure

INTERESTS

- Enjoy playing flute, skiing, kickboxing, practicing Taïdo Karate, playing chess, watching movies, and taking in views from high places.

Refer to <http://www.smuralidhar.com> for my Project Portfolio. References available upon request.