

Sumukha Tumkur Vani

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Education

- Aug - Dec* **Master of Science, Computer Science**
2016 2017 Brown University, USA
Courses: Computer Networks, Algorithms, Computational Linguistics, Advanced topics in Networking and Distributed Systems
- Sep - Jun* **Bachelor of Engineering, Computer Science and Engineering**
2010 2014 University Visvesvaraya College of Engineering, India

Professional Experience

- May - Sep* **Software Developer Intern, Oracle America, Inc., Nashua, NH, USA**
2017 2017 *Oracle Clusters and Parallel Storage*
- Involved in the development of a dev tool to analyse *cluster file system crash*
- Worked with *crash (Linux)* / *mdb (Solaris)* / *kdb (AIX)*
- Reduced system crash analysis time significantly
- Dec - May* **Research Assistant, Brown CS, Providence, RI, USA**
2016 2017 *BrownSys: Systems Research Group @ Brown CS*
- Involved in the [I-STORE project](#) under the guidance of [Prof Rodrigo Fonseca](#) and [Prof Carsten Binnig](#)
- Optimizing distributed database design to harness the capabilities of RDMA
- Exploring ways to speed up distributed ordered indices using RDMA over Infiniband
- Jul - Aug* **Software Developer, Oracle India Pvt Ltd, Bangalore, India**
2014 2016 *Oracle Virtual Networking*
- Involved in the development of device drivers for Infiniband (IB) host channel adapters (HCA)
- Developed a Performance Analyser to profile the IO performance of IB HCAs
- Developed a Command Line Interface tool for Solaris to interact with IB HCAs

Technical Skills

- Programming* C, Python, Rust, Java, C++, Javascript
Database MySQL, MongoDB
OS Solaris, Linux, Windows

Projects

- Systems* **The Dawn of High Performance Networks**
- A distributed in-memory database architecture for high performance networks like RDMA
- Stores data in a fashion that is tailored for one-sided RDMA
- Intelligently prefetches data and caches it
- Computer* **TCP over IP**
Networks - Implementation of RFC compliant TCP over IP
- Exposes Transport Layer socket APIs which can be used by applications
- Developed using Rust programming language
- Computer* **Internet Protocol over UDP**
Networks - A virtual IP Network with UDP as the link layer
- Uses Routing Information Protocol for routing decisions
- Developed using Rust programming language

Publications

- Feb 2015* Lata B T, **Sumukha T V**, Suhas H, Tejaswi V, Shaila K, Venugopal K R, L M Patnaik “[SALB: Secure Adaptive Load Balancing in Service Oriented Wireless Sensor Networks](#)”, IEEE Signal Processing, Informatics, Communication and Energy Systems Conference Proceedings
- Nov 2014* Lata B T, **Sumukha T V**, Suhas H, Raghavendra M, Shaila K, Venugopal K R, L M Patnaik, “[DSWSD: Double Sliding Window for Secure Data Transmission in WSNs](#)”, International Journal of Computer Networking, Wireless and Mobile Communications (IJCNWMC). Secured **Gold Medal and Excellent Paper Award**