

# 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

- Dec* **Research Assistant, Brown CS, Providence, RI, USA**  
*2016* *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

- 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 (IJC-NWMC). Secured **Gold Medal** and **Excellent Paper Award**
- Nov 2014* Lata B T, Raghavendra M, **Sumukha T V**, Suhas H, Tejaswi V, Shaila K, Venugopal K R, L M Patnaik, “[DRFSD: Directed Restricted Flooding for Secure Data-aggregation in Wireless Sensor Networks](#)”, International Journal of Computer Networking, Wireless and Mobile Communications (IJC-NWMC)