

# Sumukha Tumkur Vani

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## Education

- Aug - May*    **Master of Science, Computer Science**  
*2016 - 2018*    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

- June - Present*    **Software Engineer, Microsoft Corporation**, Redmond, WA, USA  
*2018*    *Azure Core Security Services*  
- Involved in the design and development of Access Control for Azure  
- Worked on the security policy evaluation engine for Azure
- 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 - 2018*    *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 Networks*    **TCP over IP**  
- Implementation of RFC compliant TCP over IP  
- Exposes Transport Layer socket APIs which can be used by applications  
- Developed using Rust programming language
- Computer Networks*    **Internet Protocol over UDP**  
- A virtual IP Network with UDP as the link layer  
- Uses Routing Information Protocol for routing decisions  
- Developed using Rust programming language