Bhavana V S

New Brunswick, USA bvs17@cs.rutgers.edu

ABOUT ME

I am a fifth-year Ph.D. student at Rutgers University advised by Prof. Srinivas Narayana and Prof. Badri Nath. I am broadly interested in computer networking and distributed systems. I am looking for opportunities to explore and contribute to active research in the industry.

EDUCATION

Doctor of Philosophy in Computer Science Spring 2021 - Present
Rutgers University, New Jersey, USA

- *GPA*: 3.8/4.0

Master of Technology in Computer Science 2010-2012
Indian Institute of Technology, Guwahati, India

- *GPA*: 8.3/10.0
- *Thesis:* Characterizing Speakers using the HMM coefficients and phase information in C

Bachelor of Technology in Computer Science 2005-2009
Marian Engineering College, Trivandrum, India

- *GPA*: 7.74/10

PUBLICATIONS

- Bhavana Vannarth Shobhana, Srinivas Narayana, Badri Nath "Load Balancers Need In-Band Feedback Control" in HotNets, 2022 [link]

RESEARCH PROJECTS

Measuring Round-Trip Response Latencies Under Asymmetric Routing Jan 2021 - May 2025
Rutgers University, New Jersey, USA https://arxiv.org/pdf/2505.14358

The objective of this project is to measure end-to-end latency experienced by a client from a device which has only visibility of one side of traffic. We introduce techniques to estimate the arrival time of a response at the client by leveraging the closed-loop nature of network connections used by services. Further, we propose algorithms that exploit multiple observations over time to infer the user-experienced latency while observing only the request traffic. Experiments with web traffic of servers rendering websites under realistic server load show that our approach can achieve 98% accuracy relative to the direct estimation of the request-to-request latency and request-to-response latency at the client.

Speaker Verification Using Simple Temporal Features and Pitch Synchronous Cepstral Coefficients June 2011 – June 2012
IIT, Guwahati, India https://arxiv.org/pdf/1908.05553.pdf

Speaker verification is a process that authenticate a speaker's identity using features from their voice. In this work, we proposed simple intra-pitch temporal information in conjunction with pitch synchronous cepstral coefficients as the feature set. With a database of twenty speakers with 100 utterances per speaker, an accuracy of 91.04% was achieved.

INDUSTRY EXPERIENCE

Citrix R&D India Private Limited Jul 2012 - Nov 2020

- Project: GSLB Incremental Config Sync across GSLB sites Aug 2020 – Nov 2020
  - Involved in design, development and quality improvement of feature.
  - Participated in test plan discussions
- Project: GSLB support for multi cluster kubernetes Sep 2019 – Jul 2020
  - Involved in design, development and quality improvement of feature.
  - Participated in test plan discussions and test plan review.
- Project: Canary Deployments Aug 2018 – Jul 2019
  - Was involved in coding for support of canary deployments of applications in kubernetes microservice world proxied by Citrix ADC.
  - Involved in design, development and quality improvement of feature.
  - Participated in test plan discussions and test plan review.
- Project: Support for Domain Based GSLB Aug 2017 – Jan 2018
  - This is done as part of gslb support for cloud deployment of Verizon. Was involved in the coding of auto scaling of domain based services, monitoring of the services and syncing this information across the gslb sites.
  - Involved in design, development and quality improvement of feature.
  - Participated in test plan discussions and test plan review.
- Project: Wildcard DNS Support Oct 2016 – Feb 2017
  - Familiarized with DNS. Developed support for wildcard RR, synthesis of response from these RRs.
  - Involved in design, development and test automation of the feature.
- Project: ALG Support for RTSP Nov 2014 – Jan 2016
  - This was done as part of the telco deployment to support RTSP protocol across Citrix's NetScaler gateway. Involved in packet processing, developing common Distributed Hash Table (DHT) module for all ALGs.
  - Involved in design, development and testing of feature.
- Minor Projects Jul 2012 – Oct 2014
  - Monitoring Support for various Citrix specific servers
  - Enhancement on tool (Review Board) used for code review
  - SNMP support for adding alerts and management information for load balancing module

PATENTS

- Domain name service caching in distributed systems
  - US Patent Number: US11272000B2 [link]
- System and method for canary deployment using DNS SRV records
  - US Patent Number: US11140073B2 [link]
- Canary deployment using an application delivery controller
  - US Patent Number: US11099826B2 [link]

BLOGS

- Load balance app traffic with a Kubernetes multi-cluster LoadBalancer [link]

RESEARCH PRESENTATIONS

- Load Balancers Need In-Band Feedback Control at HotNets 2022

TECHNICAL SKILLS

- Programming Languages: C, C++, Python
- Operating systems: Linux, Windows, macOS

COURSE WORK

- Distributed Systems, Computer Networks, Design Of Internet Services, Design And Analysis Of Data Structures And Algorithms, Operating Systems Theory, Computer System Security,