Chandan Bothra

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Education

Purdue University **2018 – Present**
Ph.D. and M.S. in Electrical and Computer Engineering
Advisor: Sanjay Rao

BITS Pilani **2012 – 2016**
B.E. (Hons.) in Electrical and Electronics Engineering

Technical Skills

Areas: Computer Networks, Wireless Networks, Computer Architecture
Languages: Python, C, C++, R, Java, Verilog, Shell scripting

Employment

Cisco Systems **2016 – 2018**
Software Engineer *Bangalore, India*

- Migrated Email and Web security services from on-prem to cloud and enabled multi-tenancy.
- Created REST APIs for the Email security services.
- Developed Python framework for automation and regression testing of APIs.

Publications

Veritas: Answering causal queries from video streaming traces. | *Publication link*
Chandan Bothra*, Jianfei Gao*, Bruno Ribeiro, and Sanjay Rao. (*equal contribution)
ACM Special Interest Group on Data Communication, **SIGCOMM 2023**

Dragonfly: Higher Perceptual Quality for Continuous 360 Video Playback. | *Publication link*
Ehab Ghabashneh, Chandan Bothra, Ramesh Govindan, Antonio Ortega, and Sanjay Rao.
ACM Special Interest Group on Data Communication, **SIGCOMM 2023**

Xatu: Richer Neural Network Based Prediction for Video Streaming. | *Publication link*
Yun Seong Nam, Jianfei Gao, Chandan Bothra, Ehab Ghabashneh, Sanjay Rao, Bruno Ribeiro, Jibin Zhan, and Hui Zhang.
ACM Special Interest Group for Computer Performance Evaluation, **SIGMETRICS 2022**

Tango of Edge and Cloud Execution for Reliability. | *Publication link*
Shikhar Suryanvansh, Chandan Bothra, Mung Chiang, Chunyi Peng, and Saurabh Bagchi.
ACM Workshop on Middleware for Edge Clouds & Cloudlets, **MECC 2019**

Patents

Analytics Engine for Defect/Bug Data Processing (*prior art) | *Publication link*
Chandan Bothra, Pooja Singh, Bibhuti Bhusan Kar, and Guruprasad S. **Cisco Systems 2017**

Projects

Design of SDN network | *Ryu, Mininet* **Spring 2020**

* Implemented SDN network with multiple switches and a controller using Python.
* Handled polling, switch and link failures and calculated routes with widest path algorithm.

Scheduling schemes in Wireless Systems | *MATLAB* **Spring 2020**

* Simulated cellular network models with symmetric and asymmetric users and compared scheduling schemes such as Greedy, Round Robin, Opportunistic, etc.
* Compared the throughput and fairness for each scheme and showed the performance of each scheme depends on the network conditions.

Implementation of Victim Cache and Cache Replacement Policies | *gem5, C++* **Fall 2019**

* Implemented victim cache in gem5 and compared the performance improvement in various benchmarks.
* Compared state-of-the-art cache replacement policies for out of order processors.

Design of Neural Net Hardware Accelerator | *Verilog* **Fall 2019**

* Used Altera software tools (Quartus, Qsys and Nios2) to design the accelerator on DE2-115 FPGA board.
* Applied hardware acceleration techniques such as custom ASIC and DMA to speedup neural network inference of MNIST dataset.

Honors

Estus H. And Vashti L. Magoon Award for Excellence in Teaching **2021**

Purdue Teaching Academy, Graduate Teaching Award **2021**

Winner, Cisco Innovation Day, Cisco Development Organization **2017**

Merit cum needs Scholarship (top 3%/650+ students), BITS Pilani **2012 – 2016**

Central Sector Scholarship, Govt. of India **2012**