CHANDAN BOTHRA

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EDUCATION

Purdue University, West Lafayette, Indiana
PhD in Electrical & Computer Engineering, *Advisor: Prof. Sanjay Rao* *Aug 2020 – Present*
M.S. in Electrical & Computer Engineering *Aug 2018 – May 2020*

Birla Institute of Technology & Sciences Pilani, Hyderabad, India *Aug 2012 – May 2016*
Bachelor of Engineering (Hons.) in Electrical and Electronics Engineering

SKILLS Languages: C, C++, Python, Java script, Shell script; **Areas**: Networking, Systems.

COURSES Computer Networks, Computer Architecture, SoC Design, MOS VLSI.

WORK EXPERIENCE

Cisco Systems, San Jose, US *College Intern* *May 2020 – Jul 2020*
- Enabled application hosting in stacks of Cat9K switches with Kubernetes.

Cisco Systems India Pvt. Ltd., Bangalore, India *Software Engineer* *Aug 2016 – Jul 2018*
- Initiated migration of Security Management Appliances from on-prem to cloud using various services such as S3, Lambda, Aurora, EC2, etc. to enable multi-tenancy.
- Created REST APIs and designed database schema for storing data of Email Security Appliances.
- Devised framework for automation of API testing and wrote libraries in Python for automation suite.

PUBLICATIONS

- **Chandan Bothra***, Jianfei Gao*, Bruno Ribeiro and Sanjay Rao. 2023. Veritas: Answering causal queries from video streaming traces. (Accepted at SIGCOMM 2023) *Equal contribution.
- Ehab Ghabashneh, **Chandan Bothra**, Ramesh Govindan, Antonio Ortega and Sanjay Rao. 2023. Dragonfly: Higher Perceptual Quality for Continuous 360° Video Playback. (Accepted at SIGCOMM 2023)
- Yun Seong Nam, Jianfei Gao, **Chandan Bothra**, Ehab Ghabashneh, Sanjay Rao, Bruno Ribeiro, Jibin Zhan, and Hui Zhang. Xatu: Richer Neural Network Based Prediction for Video Streaming. ACM SIGMETRICS, 2022.
- Suryavansh, S., **Bothra, C**., Chiang, M., Peng, C., & Bagchi, S. Tango of Edge and Cloud Execution for Reliability. ACM Workshop on Middleware for Edge Clouds & Cloudlets, 2019.

PROJECTS

Anomaly Detection in live video streaming platform. *July 2022 – Present*
- Designing a learning model to identify anomalies and the associated root cause across video sessions for global live events.

Causal models for video streaming. *Sep 2021 – Present*
- Answer 'what-if questions' using data collected from prior deployments of video streaming systems without access to Randomized Control Trials (RCTs).
- Designed Veritas, an easy to interpret domain specific ML model to relate latent stochastic process (network bandwidth) with actual observations (download times).

360 video streaming. *Jan 2021 – Sep 2022*
- Exploring architectural enhancements, algorithms, & techniques for Internet-scale 360° video streams.

Throughput prediction for better Internet Video. *Aug 2020 – Dec 2021*

- Designing models for throughput prediction in ABR algorithms to improve QoE in video streaming.
- Model uses static features such as connection type, and temporal features such as duration, size, etc. of video chunks to make predictions and improve the performance.

Design of SDN and Traffic Engineering in SDNs. *Jan 2020 – May 2020*

- Implemented SDN network with multiple switches and a controller in Python.
- Handled polling, switch and link failures and calculated routes with widest path algorithm.
- Executed multipath routing using bucket weights in an SDN deploying Mininet and Ryu controller.

Dependable Edge Computing. *Aug 2018 – Dec 2019*

- Involved simulating reliable & efficient edge computing systems in highly dynamic environment.
- Devised an algorithm for offloading tasks to Edge and Cloud servers for reduced service time of tasks.

AWARDS

- Estus H. And Vashti L. Magoon Award for Excellence in Teaching, March 2021.
- Purdue Teaching Academy, Graduate Teaching Award, March 2021.
- Winner, Cisco Innovation Day, Cisco Development Organization, Oct 2017.
- Merit cum need scholarship, BITS Pilani, Dec 2012 – May 2016.
- Central Sector Scholarship, Govt. of India, May 2012.

GRANTS

- Sigcomm 2022 travel grant. ($1500)
- Sigmetrics 2022 travel grant. ($1200)
- Summer research grant, College of Engineering, Purdue University, May 2019. ($5000)
- Middleware 2019 travel grant. ($1000)