Dilini Rukshani Athapathu

PhD Candidate in Computer Science at UC San Diego, Graduating in June 2026
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Experienced software engineer and researcher specializing in the area of systems and networking with a focus on collective communication algorithms, datacenter networks, and transport protocols. Expertise in network congestion control algorithms and high-performance packet processing frameworks such as XDP and AF_XDP. Strong programming background in Java, Python, and C.

Publications

- Reconfigurability within Collective Communication Algorithms. **R. Athapathu**, G. Porter. Proceedings of the 2nd Workshop on Networks for AI Computing, Sep. 2025, Coimbra, Portugal
- Findings of an Internet Fairness Watchdog. A. A. Philip, **R. Athapathu**, R. Ware, F. Mkocheko, A. Schlomer, M. Shou, Z.Meng, S. Seshan, and J. Sherry. ACM SIGCOMM, Aug. 2024, Sydney, Australia
- Realizing RotorNet: Toward Practical Microsecond Scale Optical Networking. M. Mellette, A. Forencich, **R. Athapathu**, A. C. Snoeren, G. Papen, and G. Porter. ACM SIGCOMM, Aug. 2024, Sydney, Australia
- Revisiting TCP Congestion Control Throughput Models and Fairness Properties At Scale. A. A. Philip, R. Ware, **R. Athapathu**, J. Sherry, and V. Sekar. ACM IMC, Nov. 2021, Virtual Event, USA

Posters and Research Talks

- Energy Consumption of TCP (Lightning Talk). **R. Athapathu**. Google Networking Research Summit, Feb. 2022
- A Watchdog Service for Measuring Congestion Control Harm on the Internet. **R. Athapathu,** R. Ware, A. Philip, S. Seshan. and J. Sherry. N2Women'20, ACM SIGCOMM, Aug. 2020
- NADA Fairness: Analyzing the Future of WebRTC. S. Vincent, A. Philip, **R. Athapathu**, S. Seshan and J. Sherry. N2Women'20, ACM SIGCOMM, Aug. 2020

Experience

PhD Candidate - Expected Graduation Date : June 2026 Sep. 2021 – Present
University of California San Diego *San Diego, CA, USA*

- Quantify the benefits that a reconfigurable network layer can bring to the large-scale collective communication algorithms that underpin Deep Neural Networks(DNN) training
- Analyze the extent of internal and external fragmentation in ML clusters with 3D Torus interconnects

Research Scholar Mar. 2020 – Apr. 2021
Carnegie Mellon University *Pittsburgh, PA, USA*

- Developed a testbed for Internet fairness measurement that acts as a watchdog service for congestion control algorithms

Associate Technical Lead May 2017 – Feb. 2020
WSO2 *Colombo, Sri Lanka*

- Involved in the design and implementation of MIME, HTTP/1.1, and HTTP/2 protocols for the standard library of ballerina programming language

Senior Software Engineer Jan. 2013 – Apr. 2017
eBuilder Technology Centre Pvt Ltd *Colombo, Sri Lanka*

- Involved in the continuous design and development of the eBuilder service network management solution for large mobile manufacturing companies (Telia, Halebop, MTS, HMD/Nokia, and Sony Mobile)

Software Engineer Sep. 2011 – Jan. 2013
Sri Lanka Insurance Corporation *Colombo, Sri Lanka*

- Developed SLIC Health Plus application, which is a mobile portable application to speed up SLIC medical insurance claim settlement process

Education

M.S. in Advanced Software Engineering, Distinction, University of Westminster, Oct. 2015

B.S. in Information Technology, First Class Honours, Middlesex University, June 2011