J. Dinal Herath

CONTACT INFORMATION	Full Name	: Jerome Dinal Herath Muthukumaranage
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EDUCATION

State University of New York - Binghamton, NY, USA

Ph.D., Computer Science, Fall 2018 - Present (GPA: 3.93/4.00)

University of Colombo, Sri Lanka

B.S., Computational Physics (Major), July 2017 (GPA: 3.66/4.00)

Chartered Institute of Marketing(CIM), United Kingdom

Professional Postgraduate Diploma in Marketing, May 2015

St. Joseph's College, Colombo, Sri Lanka

Primary education, Ordinary Levels(O/Ls), Advance Levels(A/Ls) 2011

RESEARCH INTERESTS

Adversarial Machine Learning, Real-Time Machine Learning, Anomaly Detection

RESEARCH PROJECTS

- **RAMP :** Real-Time Aggregated Matrix Profile (RAMP) is a machine learning model that is capable of identifying anomalies given a stream of multivariate time series data in real time. RAMP is a semi-supervised model that has online training and provides insight into root causes of anomalies. RAMP shows superior anomaly detection capability for both direct and adversarial attacks for scientific workflows running on Amazon EC2 servers.

- **SciBlock (PhD collaboration) :** A Blockchain based tamper proof storage system designed to protect scientific data and provenance from being forged or altered in a distributed collaborative environment. This system provides primitives allowing fast querying of provenance data efficiently and the capability to invalidate wrong/outdated provenance data without altering the blockchain.

PUBLICATIONS

1. "RAMP: Real-Time Anomaly Detection in Scientific Workflows". By **J. Dinal Herath**, Changxin Bai, Guanhua Yan, Ping Yang, Shiyong Lu. In: IEEE International Conference on Big Data 2019. [**Accepted**]

2. "DeepChannel: Wireless Channel Quality Prediction using Deep Learning". By Adita Kulkarni, Anand Seetharam, Arti Ramesh, **J. Dinal Herath**. In: IEEE Transactions in Vehicular Technology. [**Submitted & Under Review**]

3. "A Deep Learning Model for Wireless Channel Quality Prediction". By **J. Dinal Herath**, Anand Seetharam, Arti Ramesh. In: IEEE International Conference on Communications (ICC-2019).

4. "A Markovian Model for Analyzing Opportunistic Request Routing in Wireless Cache Networks". By **J. Dinal Herath** and Anand Seetharam. In: IEEE Transactions in Vehicular Technology (TVT-2018).

5. "Analyzing Opportunistic Request Routing in Wireless Cache Networks". By **J. Dinal Herath** and Anand Seetharam. In: IEEE International Conference on Communications (ICC-2018).

6. 'Simulation of Symmetric and Asymmetric movement gaits for Lateral Undulation in Serial Snake Robots". By **J. Dinal Herath** and K. Jayananda. In: 2017 International Conference on Computational Modeling & Simulation (ICCMS-2017).

7. "Comparison of Serial and Parallel Snake Robots for Lateral Undulation Motion Using Gazebo". By **J. Dinal Herath** and K. Jayananda. In: 2016 IEEE International Conference on Information and Automation for Sustainability (ICIAfS-2016).

AWARDS AND SCHOLARSHIPS	• Secure and Private AI scholarship Challenge Recipient by Udacity and Facebook. (2019) • Student travel grant to attend ACM/IEEE Symposium on Architectures for Networking and Communications (ANCS-2018). • NSF Student travel grant to attend IEEE International Conference on Communications (ICC-2018). • Winner of Dr. Sarath Gunapala Gold Medal for Computational Physics, University of Colombo, Sri Lanka (2017). • Recipient of MIND(Munasinghe Institute for Development) Scholarship, Sri Lanka (2015-2016).
EXPERIENCE	• Graduate Teaching Assistant, Watson School of Engineering & Applied Science, SUNY Binghamton. (Fall-2018, Spring-2019) • Graduate Research Assistant, Watson School of Engineering & Applied Science, SUNY Binghamton.(Fall-2017, Spring-2018, Summer-2018, Summer-2019) • Temporary Lecturer, Department of Physics, University of Colombo, Sri Lanka.(2017)
SKILLS	Programming Skills: • C, Java, Python, Tensorflow, PyTorch, Solidity, MATLAB Modeling Skills & Platforms: • Markovian Models, Deep Learning, Ethereum-Blockchain, Mathematical Modeling