Shashini A De Silva (LinkedIn Profile)
PhD Cadidate · Kelly Engineering Center, Corvallis, OR · **desilvas-at-oregonstate.edu**

Education

Sep 2016 - present — **Ph.D. Candidate in Electrical and Computer Engineering** — Oregon State University

- Research interests: Adversarial machine learning , data analytics for securing system operations, and signal processing
- Advisor: Prof. Jinsub Kim

Sep 2016 - Dec 2018 — **M.S. in Electrical and Computer Engineering** — Oregon State University

- Thesis: Coupled compressive sensing : sequential reinforcement learning (GPA : 4.0)
- Advisor: Prof. Jinsub Kim

July 2010 - May 2015 — **B.Sc (Honors) in Electronic and Telecommunication Engineering** — University of Moratuwa

- Graduated with first class honours (GPA : 3.80)

Work Experience

June 2017 - Present — **Research Assistant at Cyber Resilient Energy Delivery Consortium** — CREDC

- Develop attack resilient data analytics to secure AI and ML algorithms operating in power grids such that control decisions remain intact in the presence of data integrity attacks.

Sep 2016 - May 2017 — **Teaching Assistant** — Oregon State University

- Courses: Nonlinear optimization, discrete structures in computer science, introduction to probability & random signals, signals & systems and electrical fundamentals
- Conducted recitations, laboratory classes, TA hours and grading.

May 2015 - Aug 2016 — **Lecturer** — University of Moratuwa

- Conducted tutorial classes on signals & systems and supervised first year undergraduate projects on developing an intelligent system to play battleship board game.

Nov 2013 - May 2014 — **Trainee Engineer at Access Network Planning division** — Dialog Axiata PLC

- Engaged in 3G network maintenance, testing and optimization including signal propagation model tuning and signal booster specification verification.

Research Experience

- **Statistical signal processing applications in energy system**

2020 — **On PMU Data Integrity under GPS Spoofing Attacks: A Sparse Error Correction Framework**
- Shashini De silva, J. Kim and E.C.Sanchez, T. Hagan, IEEE Transactions on Power Systems *(under review)*

2020 — **Data Driven Sparse Error Correction for PMUMeasurements under GPS Spoofing Attacks**
- Shashini De silva, J. Kim and E.C.Sanchez, ISGT 2021 (under review)

Nov 2018 — **Sparse Error Correction for PMU Data under GPS Spoofing Attacks**
- Shashini De silva, J. Kim and E.C.Sanchez, T. Hagan, IEEE Global Conference on Signal and Information Processing

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June 2018 **Coupled Compressive Sensing - Sequential Reinforcement Approach**
- Shashini De silva and J. Kim, IEEE Statistical Signal Processing Workshop

Machine learning

May 2020 **Cost Aware Adversarial Learning**
- Shashini De silva, J. Kim and R. Raich, 45th International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2020)

Sep 2017 **Unsupervised Multiview Learning with Partial Distribution Information**
- Shashini De silva, J. Kim and R. Raich, IEEE International Workshop on Machine Learning for Signal Processing

Other topics

Dec 2015 **A Sensor Platform for the Visually Impaired to Walk Straight Avoiding Obstacles**
- Shashini De silva and D. Dias, IEEE International Conference on Sensing Technology

Awards and Honours

July 2010 - April 2015	Mahapola Higher Education Merit Scholarship for outstanding achievement in GCE Advanced Level examination
2012, 2013	Placement in Dean's List for academic excellence
2009	Higher Distinction at Sri Lankan Olympiad Mathematics competition organized by Sri Lanka Olympiad Mathematics foundation

Tools and Algorithms

Programming Languages	Python, Matlab
Optimization algorithms	Gradient descent, Newton's method, Interior-point method, Orthogonal matching pursuit, ADMM
ML Algorithms and techniques	Neural Networks (CNN), SVM, Regression, Principal Component Analysis (PCA), K-means clustering, Gaussian mixture models, Expectations Maximization (EM)
Optimization tools	cvx
Python Libraries	Tensorflow, Keras, Scikit-Learn, Pytorch, Numpy, Scipy, Matplotlib

Graduate Level Coursework

Deep learning - A	Estimation, filtering and detection - A
Convex optimization - A	Stochastic signals & systems - A
Information theory - A	Algorithms and data structures - A
Power system analysis- A	Smart grid - A

References

Prof. Jinsub Kim	Assistant Professor, EECS, OSU. Email: kimjinsu-at-oregonstate.edu