# Yasitha Warahena Liyanage                           Curriculum Vitae

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CONTACT
INFORMATION

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   *LinkedIn:* https://www.linkedin.com/in/yasitha-liyanage/
   *Website:* https://yliyanage.github.io

MAIN
INTERESTS

Statistical Signal Processing, Machine Learning, Optimization Theory.

EDUCATION

**University at Albany, State University of New York (SUNY)**, Albany, NY
   **PhD, Electrical and Computer Engineering**      **August 2017–present**
Current G.P.A.: 3.98 out of 4.
Advisor: Dr. Daphney-Stavroula Zois.

**University of Peradeniya**, Sri Lanka
   **BSc, Electrical and Electronic Engineering**      **March 2013–October 2016**
G.P.A.: 3.95 out of 4.     Standing: 3rd out of 110.

EXPERIENCE

**Applied Scientist Intern**      **Summer 2021**
**Amazon Capital Services, Inc**, Seattle, WA

**Applied Scientist Intern**      **Summer 2020**
**Amazon Capital Services, Inc**, Seattle, WA

**Graduate Research Assistant**      **August 2017–present**
**Department of Electrical & Computer Engineering**, **University at Albany**, **State University of New York (SUNY)**, Albany, NY

- Design algorithms to perform instance–wise dynamic feature selection for classification and regression problems.
- Designed algorithms to infer urban issues' importance and type from ambiguous textual, time and location information.
- Designed algorithms to optimally detect the time and geographic location of accidents in near–real-time in a road segment equipped with spatially distributed speed sensors.

Advisors: Dr. Daphney–Stavroula Zois and Dr. Charalampos Chelmis.

**Graduate Research Assistant**      **November 2016–July 2017**
**Department of Electrical and Electronic Engineering**, **University of Peradeniya**, Sri Lanka

- Developed a real–time Non–Intrusive Load Monitoring (NILM) system using uncorrelated spectral components of the active power consumption signal based on Karhunen–Loéve expansion.
- Implemented a nonlinear controller for a standard twin rotor multi–input multi–output system using state feedback linearizing techniques.

Advisors: Dr. Janaka Ekanayake, Dr. Roshan Godaliyadda, Dr. Parakrama Ekanayake and Dr. Lilantha Samaranayake.

**Electrical Engineer Intern**      **October 2015–December 2015**
**Ceylon Electricity Board**, Sri Lanka

**Electrical Engineer Intern**      **October 2014–December 2014**
**Lanka Electricity Company (Pvt) Ltd**, Sri Lanka

TEACHING
EXPERIENCE

**Teaching Assistant**      **November 2016–July 2017**
**Department of Electrical and Electronic Engineering**, **University of Peradeniya**, Sri Lanka

- EE 501: Advanced Control Systems
- EE 539: Nonlinear and Multi-variable Systems

AWARDS

**Graduate Student Association Grant Award, University at Albany**      **2020**
**NSF Student Travel Grant to attend IEEE ICASSP 2020**      **2020**

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| **President's Award for Scientific Research, Sri Lanka** | **2019** |
| **IEEE Signal Processing Society Travel Grant to attend GlobalSIP 2018** | **2018** |
| **Full Colors, Colors Awarding Ceremony, University of Peradeniya, Sri Lanka** | **2016** |
| **Undergraduate Merit Award, All Island Robot Competition** | **2013** |

PUBLICATIONS **Articles & Journals**

5. **Y. Liyanage**, D.-S. Zois, C. Chelmis, " *Dynamic Instance–wise Classification in Correlated Feature Spaces*". (under review)

4. **Y. Liyanage**, D.-S. Zois, C. Chelmis, "*Dynamic Instance–wise Joint Feature Selection and Classification*". IEEE Transactions on Artificial Intelligence, May 2021. [pdf]

3. **Y. Liyanage**, D.-S. Zois, C. Chelmis, "*Near Real–Time Freeway Accident Detection*". IEEE Transactions on Intelligent Transportation Systems, October 2020. [pdf]

2. C. Dinesh, S. Welikala, **Y. Liyanage**, M.P.B. Ekanayake, R.I. Godaliyadda, J. Ekanayake, "*Non-Intrusive Load Monitoring Under Residential Solar Power Influx*," Elsevier Journal of Applied Energy, vol. 205, pp. 1068-1080, November 2017. [pdf]

1. **Y. Liyanage**, J. Wijekoon, S. Welikala, L. Samaranayake, "*Pitch Control of a Twin Rotor System using Error Dynamics Based Nonlinear Controller*," Annual Transactions of IESL, pp. 349-353, November 2017. [pdf]

**Conferences & Workshops**

13. **Y. Liyanage**, D.-S. Zois, "*Optimum Feature Ordering For Dynamic Instance–wise Joint Feature Selection and Classification*". 46th IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2021), Toronto, Ontario, Canada, June 06-11, 2021. [pdf]

12. I. Nazar, **Y. Liyanage**, D.-S. Zois, C. Chelmis, "*Sequential Heterogeneous Feature Selection for Multi-class Classification: Application in Government 2.0*", IEEE International Workshop on Machine Learning for Signal Processing (MLSP), Aalto University, Espoo, Finland, September 21-24, 2020. [pdf]

11. **Y. Liyanage**, D.-S. Zois, C. Chelmis, "*On–the–fly Feature Selection and Classification with Application to Civic Engagement Platforms*". 45th IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2020), Barcelona, Spain, May 04-08, 2020. [pdf]

10. I. Nazar, **Y. Liyanage**, D.-S. Zois, C. Chelmis, "*Automated Optimal Online Civil Issue Classification using Multiple Feature Sets*," Asilomar Conference on Signals, Systems, and Computers (ACSSC 2019), Pacific Grove, CA, November 03-09, 2019. [pdf]

9. **Y. Liyanage**, D.-S. Zois, C. Chelmis, M. Yao, "*Robust Freeway Accident Detection: A Two-Stage Approach*," 44th IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2019), Brighton, UK, May 12-17, 2019. [pdf]

8. **Y. Liyanage**, D.-S. Zois, C. Chelmis, "*Automating The Classification Of Urban Issue Reports: An Optimal Stopping Approach*," 44th IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP 2019), Brighton, UK, May 12-17, 2019. [pdf]

7. **Y. Liyanage**, C. Chelmis, D.-S. Zois, "*A Hierarchical Framework for Timely Freeway Accident Detection and Localization*," IEEE International Conference on Big Data (BigData 2018), Seattle, WA, December 10-13, 2018. [pdf]

6. **Y. Liyanage**, D.-S. Zois, C. Chelmis, "*Quickest Freeway Accident Detection Under Unknown Post–Accident Conditions*," 6th IEEE Global Conference on Signal and Information Processing (GlobalSIP 2018), Anaheim, CA, November 26-29, 2018. [pdf]

5. **Y. Liyanage**, M. Yao, C. Yong, D.-S. Zois, C. Chelmis, "*What matters the most? Optimal Quick Classification of Urban Issue Reports by Importance*," 6th IEEE Global Conference on Signal and Information Processing (GlobalSIP 2018), Anaheim, CA, November 26-29, 2018. [pdf]

4. **Y. Liyanage**, D.-S. Zois, C. Chelmis, "*Optimal Sequential Detection of Freeway Accidents*," Asilomar Conference on Signals, Systems, and Computers (ACSSC 2018), Pacific Grove, CA, October 28-31, 2018. [pdf]

3. J. Wijekoon, **Y. Liyanage**, S. Welikala, L. Samaranayake, "*Yaw and Pitch Control of a Twin Rotor MIMO System Using a Nonlinear based Controller*," IEEE International Conference on Industrial and Information Systems (ICIIS 2017), Peradeniya, Sri Lanka, December, 2017. [pdf]

2. **Y. Liyanage**, S. Welikala, C. Dinesh, M. P. B. Ekanayake, R. I. Godaliyadda, J. Ekanayake, "*Real-time non-intrusive appliance load monitoring under supply voltage fluctuations*," IEEE International Conference on Advances in ICT for Emerging Regions (ICTer 2017), Colombo, Sri Lanka, September, 2017. [pdf]

1. D. M. N. Jayasuriya, **Y. Liyanage**, H. M. A. S. Herath, R. I. Godaliyadda, M. P. B. Ekanayake, J. V. Wijayakulasooriya, "*Intelligent Navigation System for mapping unknown environments*," IEEE International Conference on Information and Automation for Sustainability (ICIAfS 2016), Galle, Sri Lanka, December, 2016. [pdf]

RECENT
COURSEWORK
- Statistical Pattern Recognition
- Information Theory, Inference and Machine Learning
- Artificial Intelligence
- Machine Learning
- Detection and Estimation theory
- Stochastic Processes
- Advanced Linear Algebra
- Optimization methods Non–linear Programming
- Probability and Random Processes
- Algorithm and Data Structures

TECHNICAL
SKILLS
- Python, Matlab, AWS tools
- Linux, macOS
- Raspberry Pi, Arduino

PROFESSIONAL
ACTIVITIES /
MEMBERSHIPS
- **Program Committee:** AAAI Conference on Artificial Intelligence 2021 (AAAI-21)
- **Reviewer:** IEEE Transactions on Industrial Informatics
- **Member:** IEEE, IEEE Signal Processing Society
- **Member:** IESL (Institution of Engineers, Sri Lanka)
- **Industrial Coordinator:** EEES, University of Peradeniya, Sri Lanka 2016
- **Committee member:** IET, Peradeniya Chapter, Sri Lanka 2015

LANGUAGES
- **English**: IELTS
- **Sinhala**: Native