

CONTACT INFORMATION	450 Fulton St. Apt 11 Troy, NY 12180	<i>Email:</i> yasithashehanliyanage (at) gmail (dot) com <i>LinkedIn:</i> https://www.linkedin.com/in/yasitha-liyanage/ <i>Website:</i> 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 January 2022 G.P.A.: 3.98 out of 4. Dissertation Title: Dynamic Instance-Wise Decision-Making for Machine Learning. Advisor: Dr. Daphney-Stavroula Zois. University of Peradeniya, Sri Lanka BSc, Electrical and Electronic Engineering October 2016 G.P.A.: 3.95 out of 4. Standing: 3rd out of 110.	
EXPERIENCE	Applied Scientist Intern Summer 2020, Summer 2021 Amazon Capital Services, Inc, Seattle, WA Graduate Research Assistant August 2017–December 2021 Department of Electrical & Computer Engineering, University at Albany, State University of New York (SUNY), Albany, NY <ul style="list-style-type: none"> Designed algorithms to perform dynamic instance-wise decision-making. 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 Chelmiss.	
	Graduate Research Assistant November 2016–July 2017 Department of Electrical and Electronic Engineering, University of Peradeniya, Sri Lanka <ul style="list-style-type: none"> Developed a real-time Non-Intrusive Load Monitoring (NILM) system using uncorrelated spectral components of the active power consumption signal based on Karhunen-Loève 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 <ul style="list-style-type: none"> 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 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	

PUBLICATIONS **Articles & Journals**

5. **Y. Liyanage**, D.-S. Zois, C. Chelmis, “*Dynamic Instance-wise Classification in Correlated Feature Spaces*,” IEEE Transactions on Artificial Intelligence, vol. 2, no. 6, pp. 537–548, December 2021. [pdf]
4. **Y. Liyanage**, D.-S. Zois, C. Chelmis, “*Dynamic Instance-wise Joint Feature Selection and Classification*,” IEEE Transactions on Artificial Intelligence, vol. 2, no. 2, pp. 169–184, April 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. Chelmiss, “*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]

Thesis

1. **Y. Liyanage**, “*Dynamic Instance–Wise Decision–Making for Machine Learning*,” Albany, NY, January, 2022.

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
- Sinhala