

Shaswot Shresthamali

CONTACT INFORMATION	Room 24-315 Keio University 3-14-1 Hiyoshi, Kouhoku, Yokohama, Kanagawa 223-8522, JAPAN	shaswot@acsl.ics.keio.ac.jp shaswot.com +81-4-5566-1599 ext:43291
EDUCATION	Ph.D., Information Science and Technology, The University of Tokyo, Japan Dissertation Advisor: Prof. Hiroshi Nakamura Dissertation Title: <i>Reinforcement Learning-Based Optimization in Energy Harvesting Wireless Sensor Nodes</i> Master of Information Science and Technology, The University of Tokyo, Japan Dissertation Advisors: Prof. Hiroshi Nakamura, Prof. Masaaki Kondo Dissertation Title: <i>Adaptive Power Management of Solar Energy Harvesting Sensor Node by Reinforcement Learning</i> B.E., Electronics and Communication Engineering, Tribhuvan University, Nepal Final Year Project Advisor: Prof. Dinesh Kumar Sharma Final Year Project: <i>Digital Audio Processor</i>	March 2021 March 2018 October 2012
EMPLOYMENT	Researcher, Kondo Laboratory, Department of Information and Computer Science, Keio University, Japan Research Fellow, Japan Society for the Promotion of Science (JSPS), Tokyo, Japan Engineer, Ridge-i, Tokyo, Japan Assistant Professor, Sagarmatha Engineering College, Tribhuvan University, Nepal	April 2021–Present April 2018–March 2021 February 2018–August 2018 November 2012–October 2014
RESEARCH INTERESTS	Reinforcement Learning (RL), Deep RL, Off-policy RL, Distributed RL, Quantum Computation, Deep Learning Accelerators. I am currently researching on fault-tolerant methods for accelerating Deep Neural Networks (DNN) using RL and Genetic Algorithms (GA). I am also working on error-correction mechanisms for Quantum Computing. My doctoral research deals with RL-based methods for energy scheduling in energy-harvesting wireless sensor nodes. The focus is on applied RL and its relation to neural network function approximation, off-policy learning and distributed learning .	

HONORS AND AWARDS	DC1 Fellowship , JSPS	2018–2021
	Grants-in-Aid for Scientific Research , JSPS	2018–2021
	Young Researcher Award , Information Processing Society of Japan (IPSJ)	2016
	Japanese Government MEXT Scholarship ,	2015–2018
	College Fellowship , Pulchowk Campus, Tribhuvan University	2008–2012
TEACHING EXPERIENCE	Assistant Professor , Sagarmatha Engineering College, Tribhuvan University	
	Digital Signal Processing	Winter 2013
	Advanced Electronics	Winter 2012, 2013
	Instrumentation II	Winter 2013
	Embedded Systems	Winter 2013
	Electronic Devices and Circuits	Winter 2013
	Electric Circuit Theory	Summer 2013
	Basic Electronics Engineering	Summer 2013
MENTORING/ SUPERVISION	Graduate Students	
	Lorenzo Sonnino	November 2021–Present
	Interns	
	Chander Shekhar	July 2019
PROFESSIONAL ACTIVITIES, OUTREACH, AND SERVICE	Invited Speaker	
	Nepal Engineers Association Japan (NEAJ) “Sharing Professional Experience and Academic Research Work”	November 27, 2021
	Nepal-Japan Educational Dialogue Webinar: “ Higher Education Opportunities in Japan ”	November 26, 2021
	The University of Tokyo Alumni Association Nepal (UTAAAN) Annual Benkyokai	April 17, 2021
	Program Committee	
	4th Sustainable Computing Systems Workshop (SUSCW 21)	November 2021
	Publicity Chair	
	Workshop on Challenges in Artificial Intelligence and Machine Learning for Internet of Things (AIChallengeIoT 2020)	November 2020
	Seminar Organizer	
	A Seminar on FPGA Technology and its role in Electronics Engineering in Nepal Sagarmatha Engineering College, Nepal	July 2013
	The University of Tokyo Nepali Society	2015–2021
	President	2017–2018

PUBLICATIONS IN
PROGRESS

1. **Shresthamali, S.**, Kondo, M., Nakamura, H., (2021)
Multi-objective Reinforcement Learning for Energy Harvesting Wireless Sensor Nodes,
2021 IEEE 14th International Symposium on Embedded Multicore/Many-core Systems-on-Chip
(MCSoc).

REFEREED
PUBLICATIONS

1. **Shresthamali, S.**, Kondo, M., Nakamura, H., (2019)
Power Management of Wireless Sensor Nodes with Coordinated Distributed Reinforcement Learning,
2019 IEEE 37th International Conference on Computer Design (ICCD) (pp. 638-647).
2. **Shresthamali, S.**, Kondo, M., Nakamura, H., (2017)
Adaptive power management in solar energy harvesting sensor node using reinforcement learning,
ACM Transactions on Embedded Computing Systems (TECS), Vol. 16, Issue 5s, pp 1-21,
September, 2017.
3. Chhetri, S., R., Poudel, B., Ghimire, S., **Shresthamali, S.**, Sharma, D., K., (2015)
Implementation of Audio Effect Generator in FPGA,
Nepal Journal of Science and Technology 2014, Vol. 15, Issue 1, pp. 89-98, February, 2015.
4. **Shresthamali, S.**, (2014)
Parallel Processing Using FPGAs,
KEC Journal of Science and Engineering (KJSE), Vol. 2, Issue 1, pp 79-82, November, 2014.

UNREFEREED
PUBLICATIONS

1. シュレスタマリ サソット, 近藤 正章, 中村 宏 (2017)
適応的電力制御を行う環境発電駆動センサノードの強化学習戦略の比較評価,
研究報告システム・アーキテクチャ (ARC) , Vol. 2017-ARC-227, No. 28, pp. 1-8, July,
2017.
2. シュレスタマリ サソット, 近藤 正章, 中村 宏 (2017)
強化学習を用いた環境発電駆動センサノードの適応的電力制御手法の検討,
研究報告システム・アーキテクチャ (ARC) , Vol. 2017-ARC-225, No. 26, pp. 1-6, March,
2017.

PRESENTATIONS

1. **Reinforcement Learning for Energy Harvesting Wireless Sensor Nodes**,
Keynote Speech at 4th Sustainable Computing Systems Workshop (**SUSCW 21**),
December 2021
2. **Power Management of Wireless Sensor Nodes with Coordinated Distributed Reinforcement Learning**,
2019 IEEE 37th International Conference on Computer Design (ICCD), November 2019
3. **Adaptive power management in solar energy harvesting sensor node using reinforcement learning**,
2017 International Conference on Embedded Software (EMSOFT), October 2017
4. **Adaptive Power Management of Energy Harvesting Sensor Nodes using Reinforcement Learning: A comparison of Q-Learning and SARSA Algorithms**,
217TH IPSJ SIGARC SWoPP, July 2017
5. **Reinforcement Learning For Power Management In Energy Harvesting Sensor Nodes** (Poster),
54th Design Automation Conference (DAC), June 2017
6. **Adaptive Power Management For Energy Harvesting Sensor Nodes**,
217th IPSJ SIGARC ETNET, March 2017
7. **FPGA: A Brief Introduction**,
Seminar on FPGA Technology And Its Role In Electronics Engineering In Nepal, Sagarmatha
Engineering College, July 2013
8. **An Introduction to Parallel Processing Using FPGAs**,
LOCUS, Pulchowk Campus, June 2013