Shaswot Shresthamali

CONTACT INFORMATION	Eng. Bldg. 1, 508 The University of Tokyo 7-3-1 Hongo, Bunkyo, Tokyo 113-8656, JAPAN	shaswot@hal.ipc.i.u-tokyo.ac.jp shaswot.com +81-3-5841-8601

EDUCATION

Ph.D., Information Science and Technology,   **March 2021 (expected)**
The University of Tokyo, Japan

> Dissertation Advisor: Prof. Hiroshi Nakamura

> Dissertation Title: *Reinforcement Learning-Based Optimization in Energy Harvesting Wireless Sensor Nodes*

Master of Information Science and Technology,   **March 2018**
The University of Tokyo, Japan

> Dissertation Advisors: Prof. Hiroshi Nakamura, Prof. Masaaki Kondo

> Dissertation Title: *Adaptive Power Management of Solar Energy Harvesting Sensor Node by Reinforcement Learning*

B.E., Electronics and Communication Engineering,   **October 2012**
Tribhuvan University, Nepal

> Final Year Project Advisor: Prof. Dinesh Kumar Sharma

> Final Year Project: *Digital Audio Processor*

EMPLOYMENT

Research Fellow,   **April 2018–March 2021**
Japan Society for the Promotion of Science (JSPS),
Tokyo, Japan

Engineer,   **February 2018–August 2018**
Ridge-i, Tokyo, Japan

Assistant Professor,   **November 2012–October 2014**
Sagarmatha Engineering College,
Tribhuvan University, Nepal

RESEARCH INTERESTS

Reinforcement Learning (RL), Deep RL, Off-policy RL, Distributed RL.

My research deals with RL-based methods for energy scheduling in energy-harvesting wireless sensor nodes. My focus is on applied RL and its relation to **neural network function approximation**, **off-policy learning** and **distributed learning**. During my time in Sagarmatha Engineering College, I spearheaded the research division as the **College Research Coordinator** and initiated the Xilinx Research Lab by collaborating with the Xilinx University Program.

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**

REFEREED
PUBLICATIONS

4. **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).

3. **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.

2. 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.

1. **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

2. 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.

1. 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

7. **Power Management of Wireless Sensor Nodes with Coordinated Distributed Reinforcement Learning**,
2019 IEEE 37th International Conference on Computer Design (ICCD), November 2019

6. **Adaptive power management in solar energy harvesting sensor node using reinforcement learning**,
2017 International Conference on Embedded Software (EMSOFT), October 2017

5. **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

4. **Reinforcement Learning For Power Management In Energy Harvesting Sensor Nodes** (Poster),
54th Design Automation Conference (DAC), June 2017

3. **Adaptive Power Management For Energy Harvesting Sensor Nodes**,
217th IPSJ SIGARC ETNET, March 2017

2. **FPGA: A Brief Introduction**,
   Seminar on FPGA Technology And Its Role In Electronics Engineering In Nepal, Sagarmatha
   Engineering College, July 2013

1. **An Introduction to Parallel Processing Using FPGAs**,
   LOCUS, Pulchowk Campus, June 2013