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Ashutosh Timilsina

Education

2019–Present **Ph.D. Candidate, Computer Science**, *University of Kentucky*, Lexington, KY, *GPA 3.917/4.0*. Dissertation title: *Peer-to-Peer Energy Trading in Smart Residential Environment with User Behavioral Modeling*
Advisor: Simone Silvestri

2012–2016 **Bachelor of Engineering, Electrical Engineering**, *Tribhuvan University*, Institute of Engineering, Pulchowk Campus, Nepal
Graduated with First Division
Advisor: Arbind Kumar Mishra

Technical Skills

Languages C/C++, Python, MATLAB, SQL
Libraries Gurobi Optimizer, NetworkX, SciPy, PyTorch, Keras, TensorFlow, MPI, OpenMP
Software LaTex, AutoCAD, ADS, KiCAD, SolidWorks, Adobe Creative Suite

Research Interests

User Behavioral Modeling, Mathematical Optimization, Machine Learning, Reinforcement Learning, Renewable Energy, Cyber-Physical Human System

Research Experience

Aug. 2019 – Present **Graduate Research Assistant**
Cyber Physical Systems Lab (CPS Lab) – Dr. Simone Silvestri's Lab, University of Kentucky

- Working on a project titled " *Peer-to-Peer Energy Trading in Smart Residential Environment with User Behavioral Modeling"*
- Also working on a mobile crowdsourcing project with Electric Vehicles that brings ride-sharing and energy-sharing together through task recommendation and reverse auction mechanism

Work Experience

Apr. 2019 – Aug. 2019 **Electrical Engineer**
Nilgiri Khola Hydropower Company Ltd., Kathmandu, Nepal.

- Handled the tender process for Nilgiri 1 and 2 Cascade Hydropower Project of 110 MW capacity

- Responsible for design supervision of electro-mechanical hydropower equipment

May 2017 – May 2019 **Electrical Engineer**
Mandu Hydropower Ltd., Kathmandu, Nepal.
- Responsible for design supervision and installation of electro-mechanical hydropower equipment for Bagmati Hydropower Project of 22 MW capacity
- Supervised design and installation of 66 KV transmission line of 12 km length
- Project commenced successfully on 2019 March

Apr. 2019 – Aug. 2019 **Technical Officer**
H.I.F. Renewable Energy Ltd., Kathmandu, Nepal.
- Involved in feasibility study and designing of grid connected solar PV projects based in Nepal
- Performed technical and financial viability of PV projects

Publications

2022 **Prospect Theory-inspired Automated P2P Energy Trading with Q-learning-based Dynamic Pricing (link)**
Timilsina, A. & Silvestri, S. (2022).
Submitted for review

2021 **A Reinforcement Learning Approach for User Preference-aware Energy Sharing Systems (link)**
Timilsina, A., Khamesi, A. R., Agate, V., & Silvestri, S. (2021).
In IEEE Transactions on Green Communications and Networking.

2019 **Comparative Analysis of Cell Balancing Topologies in Battery Management Systems (link)**
Khanal, A., ***Timilsina, A.,*** Paudyal, B., & Ghimire, S. (2019, May).
In Proceedings of the IOE Graduate Conference, Pulchowk, Nepal (pp. 301-307).

2018 **Overview and Feasibility of Floating Solar Photovoltaic System in Nepal (link)**
Rai, A., **Timilsina, A.**, & Nepali, B. (2019).
In Journal of the Institute of Engineering, 15(3), 267-274.

2017 **Technical Design of a Grid-Connected Photovoltaic System and Its Challenges in Nepalese Power Scenario (link)**
Timilsina, A., & Paudyal, B. (2017, December).
In 2017 7th International Conference on Power Systems (ICPS) (pp. 334-339). IEEE.

2016 **A Novel Approach for Wireless Power Transfer Using Magnetic Resonant Method (link)**
Timilsina, A., Nepali, B., Paudyal, B., Kunwar, J. D., Mishra, A. K., Tamrakar, I., & Ghimire, S. K.

Awards

2015 **LOCUS 2015: Electrical Project Competition - Winner**
Cockcroft-Walton Ladder Network Based Air Ionizer for air purification

2014 **LOCUS 2014: Electrical Project Competition - Appreciation**
Tesla Coil

2013 **NRSU: PS Young Writer Competition – Appreciation**

2013 **LOCUS 2013: Theme Based Competition – Token of Appreciation**
Automatic Greenhouse

2013 **NASA International Higher Secondary School – Honor and Appreciation**
Honored for being an excellent and outstanding student in High School

Leadership & Volunteering Experience and Other Services

Aug. 2016 - Present **Nepali Student Organization** – *Secretary*

Apr. 2016 – Aug. 2016 **Zerone Magazine and Zerone Scholar** – *Editor and Author*

- Contributed insightful articles to the Zerone magazine and Scholar

Selected, proofread, and edited articles for publication

2014 – **Electrical Club** – *Founding Member*

- Actively involved in establishing the student organization for electrical engineering
- Oversaw and organized several events and programs for the club

2012-2016 **LOCUS** – *Volunteer and Participant*

- Collaborated with executive committees and other volunteers of LOCUS
- Largest technological fair and expo by undergraduate students
- Participant and winner in electrical event category

Peer-Reviewer

2019 **International Conference on Computing, Networking, and Communications (ICNC) – Network Algorithms and Performance Evaluation (NAPE)**

2020 **IEEE International Conference on Smart Computing (SmartComp)**

2021 **International Conference on Distributed Computing in Sensor systems (DCOSS'21)**

2021 **IEEE Global Communications Conference (GLOBECOM'21)**

2021 **17th International Conference on Wireless and Mobile Computing, Networking and Communications (WiMOB-SPPDT'21)**

2021 **14th International Conference on Communication and System and Networks (COMSNETS'22)**

2022 **IEEE Wireless Communications and Networking Conference (IEEE WCNC'22)**

2022 **IEEE International Symposium on a World of Wireless Mobile and Multimedia Networks (IEEE WoWMoM'22)**

2022 **International Conference on Distributed Computing Systems (ICDCS'22)**

2022 **IEEE/ACM 30th International Symposium on Quality of Service (IWQoS'22)**

2022 **IEEE International Conference on Smart Computing (SMARTCOMP'22)**

2022 **Pervasive and Mobile Computing Journal**