SAUGAT TRIPATHI
Oxford, OH
(573)-476-3506 | https://saugattripathi.com.np | tripats@miamioh.edu
https://www.linkedin.com/in/saugat-tripathi

EDUCATION

Miami University, Oxford, OH
Master of Science August 2023
Electrical and Computer Engineering (Reinforcement Learning) | 4.0

- Conducted multiple independent research on early detection of breast cancer classification with image processing and CNN classification.
- Executed course project on heart disease classification leveraging biomedical signal processing and deep learning with 82% accuracy.

Thapathali Campus, IOE, Tribhuvan University, Kathmandu, Nepal
Bachelor of Engineering September 2019
Electronics and Communication | 3.80 (Scholaro Conversion)

- Initiated a project on semi-autonomous two-vehicle navigation system-based guidance with a dynamic feedback control loop.
- Relevant elective courses artificial intelligence, big data technologies and data mining.

EXPERIENCE

PASSIVELOGIC, Salt Lake City, UT July 2023 - Present
BLE Wireless Intern

- Spearheaded development of a proprietary wireless mesh protocol on top of Bluetooth mesh leveraging synchronized nodes using time-multiplexing for power efficient system with MPSL and interrupt handling.
- Devised advanced mesh packet monitoring and encrypting tools for both over-the-air captured segmented and unsegmented packets with Wireshark support.
- Engineered comprehensive firmware solutions for host systems and customized software development over Zephyr RTOS for a proprietary hardware platform, improving system compatibility as a part of a team of 8 while collaborating with test engineers.
- Collaborated on BT mesh networking system with a vendor-specific model for transfer of custom sensory information to a centralized controller.

MIAMI UNIVERSITY, Oxford, OH August 2021 - July 2023
Research Assistant

- Managed collaborative research project on corrosion of various metals (with the University of Texas) with a focus on EBSD and SECCM data integration, cleansing, and deep learning model development with a 0.98 coefficient of using novel image registration and processing techniques on 7 experiments.
- Researched trajectory and network connectivity optimization for UAV-based wireless communication networks operating on deep reinforcement learning algorithms.
- Developed a novel distributed algorithm based on multi-agent deep q-learning and game theory for control of distributed multi-UAV information sharing for a decentralized partially observable system.

SKILLS

Programming: Python, Embedded C, MATLAB, C, C++ and HTML.
Packages: Pytorch, Tensorflow, Pandas, Numpy, Stable Baseline, Zephyr RTOS, Nrfxlib.
Research and Publication: Optimal Charging Profile Design for Solar-Powered Sustainable UAV Communication Networks (DOI: 10.48550/arXiv.2302.06092, IEEE ICC), Distributed Design on User Connectivity Maximization in UAV Based Communication Network (IEEE GlobeCom accepted, pending publication)
Presentation: Oral IEEE GlobeCom 2023 conference presentation (accepted), Oral presentation paper for the STLE 2022 conference, and several on-the-job professional presentations on projects and research.

CERTIFICATIONS

- Python (Certificate): Getting Started with Python, Python Data Structure, Using Python to Access Web Data, Using Database with Python, Machine Learning (Certificate): Machine Learning

AWARDS AND RECOGNITIONS

- Award: Thapathali campus semester topper 2nd year 2nd part and 4th year 1st part.
- Gold award at STLE 2022 conference for poster presentation among 40 researchers. (also covered in Miami University news).