Adarsha Bhattarai

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Education

University of Nebraska-Lincoln, Omaha, NE
PhD in Engineering, Specialization in Computer Engineering — Aug 2021 - present
GPA: 3.93/4.0

Istanbul University, Istanbul, Turkey
B.S. in Electrical and Electronics Engineering — Aug 2017 - June 2021

Research Interests

Machine learning, computer vision, and signal processing for medical imaging and IoT applications, as well as security and optimization in wearable and embedded systems.

Professional Experience

Instructor and Lab Teacher, University of Nebraska-Lincoln — Jan 2022 – present

Research Assistant, University of Nebraska-Lincoln — Aug 2021 – present

Research and Development Intern, Endless Health, USA (Remote) — June 2023 – Aug 2023

Industry Intern, Furmak Machinery, Istanbul, Turkey — Jan 2021 – Feb 2021

Industry Intern, Kilic Machine and Automation, Istanbul, Turkey — June 2020 – Sep 2020

Research Intern, Koc University, Istanbul, Turkey — June 2019 – Aug 2019

Grants and Fellowships

Holling Fellowship - University of Nebraska-Lincoln. — Aug 2022 - present

GRACA Grant - University of Nebraska Omaha. — May 2023 – Aug 2023

Bosporus Scholarship Fellow - Istanbul University. — Aug 2017 - June 2021

Golden Jubilee Fellowship - Government of India. — Feb 2015 – Feb 2016

Awards

Security Mechanisms and Communication Strategies for the Adaptive Partition of Remote ECG Diagnosis.
Best Oral Presentation Award, Student Research and Creative Activity Fair, UNO, 03/2024.

Enhancing Wearable ECG Sensors.
Best Research Paper Award, 2024 IEEE 14th Annual CCWC, 01/2024.

Publications

1. Bhattarai, Adarsha, et al. "Frequency Offset Selection and Deep Learning for Rapid CEST MRI Data Acquisition." International Society for Magnetic Resonance in Medicine (2024). Abstract submitted for review.

2. Bhattarai, Adarsha, et al. "Enhancing Wearable ECG Sensors: A Secure, Accurate and Efficient System Architecture for Resource-Constrained ECG Monitoring." 2024 IEEE 14th Annual Computing and Communication Workshop and Conference (CCWC). IEEE, 2024.

3. Bhattarai, A., and Dongming Peng. "An Intelligent Wearable ECG Sensor in Intra-medical Virtual Chain Network and Inter-medical Virtual Chain Network." *SN Computer Science*, 2024, 5.4: 329.

4. Bhattarai, A., and Dongming Peng. "Poster: Empowering IoT-Driven Remote ECG Monitoring: The Role of AI Spread-out." 2024 *IEEE International Conference on Mobility, Operations, Services and Technologies (MOST)*, IEEE, 2024.

5. Bhattarai, A., Yutong Liu, and Dongming Peng. "Multi-Tier Arrhythmia Detection: Achieving AI Hardware Compatibility Across Diverse Nodes." 2024 *IEEE World AI IoT Congress (AIIoT)*, IEEE, 2024.

6. Wu, R., Liu, N., Peng, G., Bhattarai, A., & Peng, D. "An Innovative Method for Securing QR Codes against Counterfeits in Supply Chain Management." *In 2024 IEEE 14th Annual Computing and Communication Workshop and Conference (CCWC)* (pp. 0589-0596). IEEE, January 2024.

7. Samaraweera, C., Peng, D., Bhattarai, A., & Liu, Y. "Poster: Embedded-Based Differentiated Communication for Remote ECG Monitoring with a Multi-Level Blockchain System." 2024 *33rd International Conference on Computer Communications and Networks (ICCCN)*, IEEE, 2024.

8. Bhattarai, A., et al. "Adaptive partition of ECG diagnosis between cloud and wearable sensor net using open-loop and closed-loop switch mode." *IEEE Access*, 2022, 63684-63697.

9. Bhattarai, A., and Dongming Peng. "An integrated secure efficient computing architecture for embedded and remote ECG diagnosis." *SN Computer Science*, 2022, 4.1: 45.

10. Bhattarai, A., et al. "Tackling Integration Challenges of Machine Learning in Diverse Internet of Things: A Spread-out Architectural Solution." *Internet of Things*, CRC. *Book chapter accepted. Status: In Publication.*

11. Samaraweera, C., Bhattarai, A., et al. "Artificial Intelligence in the Internet of Things: Exploring Algorithms, Applications, and Challenges." *Internet of Things A to Z: Technologies and Applications*, Wiley. *Book chapter submitted and in review.*

Teaching

University of Nebraska-Lincoln, Omaha, NE.
Teaching Assistant. Aug 2022 – present
ECEN 310 Digital Design, ECEN 313 Switching Circuit Theory.
Skills: Verilog Programming, Microprocessor Design, Embedded Systems.

University of Nebraska-Lincoln, Omaha, NE.
Instructor, Teaching Assistant. Jan 2022 – present
ECEN 155E Computer Science I.
Skills: C Programming, Linux, Testing, Debugging.