

EDUCATION

University of Hawaii at Manoa

Hawaii, USA

Ph.D. in Electrical Engineering, Advisor: Dr. Victor M. Lubecke

August, 2016- December, 2020

- Thesis: Non-Contact and Secure Radar-Based Continuous Identity Authentication In Multiple-Subject Environments
- Research Interest: Wireless Sensing, Biomedical Doppler Radar, Radio Frequency Sensors, Antenna Array Signal Processing, and Machine Learning Classifiers for Pattern Recognition

University of Dhaka

Dhaka, Bangladesh

M.S. in Electrical and Electronic Engineering, Advisor: Dr. Md Adnan Kiber

2012-2014

- Thesis: Smart-Phone Based Intelligent Telemedicine System For Bangladesh Perspective

University of Dhaka

Dhaka, Bangladesh

B.S. in Electrical and Electronic Engineering

2008-2012

EXPERIENCE

University of Dhaka

Dhaka, Bangladesh

Assistant Professor

January, 2022-Present

- Courses Taught: Signals and Systems, Computer Aided Engineering Drawing, High-Speed Computer Networking, Industrial and Biomedical Instrumentation
- Supervised 06 Undergrad Students Thesis and 1 M.Sc. Student Thesis

University of Dhaka

Dhaka, Bangladesh

Lecturer

December, 2014-January, 2022

- Courses Taught: Electrical Circuit, Digital Electronics, Computer Programming, Wireless Communication
- Supervised Undergrad Students Thesis

Kyoto University

Kyoto, Japan

JSPS Invitational Fellow

August, 2023-October, 2023

- Research Project: Non-Contact Blood Pressure Estimation Using Human Body Displacement Waveforms

University of Hawaii at Manoa

Hawaii, USA

Research and Teaching Assistant/Department of Electrical Engineering

Department of Physics and Astronomy

August, 2016-December, 2020

- Project: Non-Contact Physiological Sensing Using Microwave Doppler Radar
- Courses Taught: Electrical Circuit Lab, Basic Physics Electricity and Magnetism Lab

ON Semiconductor

Arizona, USA

Radar System and Applications Engineering Intern/Intelligent Sensing Group

May, 2019- August, 2019

- Project: Non-Contact Driver Vital Sign Monitoring Using FMCW Automotive Radar

Adnoviv, Inc

Hawaii, USA

Radar System and Applications Engineering Intern/Intelligent Sensing Group

May, 2020- August, 2020

- Project: Radar-based Occupancy Sensing

PUBLICATIONS (SELECTED)

1. A. Droitcour, and **Shekh M. M. Islam** , “Building Occupancy Estimation Using Microwave Doppler Radar and Time-Frequency Analysis”, *US Patent No: W0 2022/159315 A2*.
2. S. Doha Uddin, M. Shafkat Hossain, **Shekh M. M. Islam**, “Heart Rate Variability (HRV)-Based Obstructive Sleep Apnea Events Classification Using Microwave Doppler Radar”, *IEEE Journal of Electromagnetics, RF, Microwaves in Medicine and Biology (IF: 3.2) Manuscript DOI:https://ieeexplore.ieee.org/abstract/document/10265037*, 2023
3. **Shekh M. M. Islam**, A. Droitcour, E. Yavari, V. M. Lubecke, O. Boric-Lubecke, “Building Occupancy Estimation Using Microwave Doppler Radar and Wavelet Transform”, *Elsevier Building and Environment (IF: 8.6) Manuscript DOI:https://www.sciencedirect.com/science/article/pii/S0360132323002603*, 2023
4. **Shekh M. M. Islam**, Yao Zheng, Yanjun Pan, Marionne Millan, Willy Chang, Ming Li, Olga Borić-Lubecke, Victor Lubecke, Wenhai Sun, “Cross-Modality Continuous User Authentication and Device Pairing with Respiratory Patterns”, *IEEE Internet of Things Journal (IF: 10.346) Manuscript DOI:https://ieeexplore.ieee.org/abstract/document/10132905*, 2023
5. C. Song, A. Droitcour, **Shekh M. M. Islam**, A. Whiteworth, Victor M. Lubecke, and O. Boric-Lubecke, “Unobtrusive Occupancy and Vital Signs Sensing for Human Building Interactive Systems”, *Nature Scientific Report (IF: 4.99) Manuscript DOI:https://doi.org/10.1038/s41598-023-27425-6*, 2023
6. **Shekh M. M. Islam**, O. Boric-Lubecke, and V. Lubecke, “Identity Authentication in Two Subject Environments Using Microwave Doppler Radar and Machine Learning Classifiers”, *IEEE Transactions on Microwave Theory and Techniques (IF: 4.381) Manuscript DOI: 10.1109/TMTT.2022.3197413*, 2022
7. **Shekh M. M. Islam**, “Radar-based remote physiological sensing: Progress, challenges, and opportunities”, *Frontiers in Physiology (IF: 4.755) Manuscript DOI: https://doi.org/10.3389/fphys.2022.955208*, October 2022
8. **Shekh M. M. Islam**, Y. Zheng, O. Boric-Lubecke, and V. Lubecke, “Contactless Radar-Based Sensors: Recent Advances in Vital Signs Monitoring of Multiple Subjects Using Contactless Radar-Based Sensors”, *IEEE Microwave Magazine (IF: 2.949)*, July, 2022
9. **Shekh M. M. Islam**, and V. Lubecke, “Sleep Posture Recognition with a Dual-Frequency Microwave Doppler Radar and Machine Learning Classifiers”, *IEEE Sensors Letters (IF: 2.949)*, Vol. 6(3), March, 2022
10. **Shekh M. M. Islam**, and V. Lubecke, “Breath-ID: Radar’s New Role in Biometrics”, *IEEE Aerospace, Electronic and System Magazine (IF: 1.594)*, Vol. 36(12), December 2021
11. **Shekh M. M. Islam**, O. Boric-Lubecke, Y. Zheng and V. Lubecke, “Radar-Based Non-Contact Continuous Identity Authentication”, *MDPI Remote Sensing (IF: 4.509)*, Vol. 12(14), July 2020
12. **Shekh M. M. Islam**, O. Boric-Lubecke, and V. Lubecke, “Concurrent Respiration Monitoring of Multiple Subjects by Phase-Comparison Monopulse Radar Using Independent Component Analysis (ICA) with JADE Algorithm and Direction of Arrival”, *IEEE Access (IF: 3.745)*, Vol. 8(1), April 2020
13. John E. Kiriazi, **Shekh M. M. Islam**, O. Boric-Lubecke, and V. Lubecke , “Sleep Posture Recognition Using Dual Frequency Cardiopulmonary Doppler Radar”, *IEEE Access (IF: 3.745)*, Vol. 9, February 2021
14. **Shekh M. M. Islam**, O. Boric-Lubecke and V. Lubecke, “Occupant Entry and Exit Event Extraction Using Continuous Wave (CW) Doppler Radar and Wavelet Analysis” (Paper ID 319-RK928), *IEEE International Microwave Symposium (IMS’23)*, San Diego, CA, USA, 2023

SKILLS

- Radar Signal Processing/Algorithm Development/Machine Learning Classification: MATLAB

PROFESSIONAL MEMBERSHIP

- **IEEE** Senior Member: IEEE Microwave Theory and Technique Society (MTT), IEEE Engineering in Medicine and Biology Society (EMBS)
Technical Committee Affiliate Member of MTT-28: Biological Effects and Medical Applications Committee

SCHOLARSHIPS AND AWARDS

- Best Graduate Student Research Award-Giving Tree Scholarship-UH Manoa 2019-2020
- Best Innovation Award-Annual Medical device design Competition-John A Burns School of Medicine 2019
- Prime Minister Gold Medal Award, Bangladesh 2017
- Deans Award-Faculty of Engineering-University of Dhaka 2014

REFERENCES

Dr. Victor M. Lubecke

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University of Hawaii at Manoa, Hawaii, USA

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Dr. Olga Boric-Lubecke

Professor

Department of Electrical Engineering

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