Nourhan **Bayasi**

Vanier Scholar and Ph.D. Candidate at UBC

Vancouver, British Columbia, Canada

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Work Experience

Teaching Assistant
September 2020 – Current

The University of British Columbia *Vancouver, Canada*

- Marking of Exams, Quizzes, Assignments, Lab Reports, and/or Project Reports as directed by the course professor.
- Set up of equipment in preparation of Lab Sections as directed by the course professor.
- Supervision and instruction of students in Lab Sections, Tutorial Sessions and Office Hours as directed by the course professor.

Graduate Academic Assistant
June 2020 – August 2020

The University of British Columbia *Vancouver, Canada*

- Assist professor in transition to online-teaching: Design a course blueprint, determine how asynchronous and synchronous learning will work for the course, find suitable tools, prepare presentation slides, etc.
- Redesign assessments to build flexibility.

Lab Instructor – Electrical Engineering Department
August 2018 – December 2019

Higher Colleges of Technology *Sharjah, UAE*

- Assist in the development of labs.
- Support students and faculty in using machines, tools and equipment within the laboratory.
- Support faculty and students in resourcing and implementation phase of student projects.
- Receive, install and maintain laboratory equipment and supplies.
- Maintain a schedule of preventative maintenance for all equipment and keep adequate manuals and maintenance logs.
- Demonstrate the use of machines, tools and equipment within the lab.
- Maintain consumable materials store and ensures adequate inventory levels for supplies.
- Maintain systems and procedures to track borrowed equipment and tools.
- Observe and reinforce safety and housekeeping procedures and protocol within the laboratory.
- Aid staff and students in the purchasing procedures with regards of equipment and parts for student projects.
- Labs taught: Digital Circuits, Electrical Circuits, Electronics I, Electronics II, PCB, Communication Systems, SDP, etc.

Instructor - Technical Studies Program (Vocational Program)
August 2017 – July 2018

Higher Colleges of Technology *Sharjah, UAE*

- Curriculum development: Plan, design and develop of training materials and assessment instruments in line with awarding body requirements [NCFE, EAL].
- Identify and assess learner needs and create effective learning options to meet those needs.
- Deliver training of the highest standards which meets the requirements set out in the specification for qualifications to support learners in achieving defined learning outcomes.
- Deliver training using a variety of training aids and appropriate resources to suit learner needs.
- Plan and conduct assessment activities in line with the standards required by the program.
- Develop and update delivery training curriculum to incorporate feedback and adapt to changing business needs, preparing materials and training rooms for workshop activities, developing new curriculum or modify existing materials to meet the needs of the learners.
- Identify and modify workshop resources to meet the needs of learners with varying backgrounds, learning styles and special needs as approved.

Workshop Engineer – Electrical Engineering Department
September 2015 – July 2017

Institute of Applied Technology *Abu Dhabi, UAE*

- Reinforce lessons presented by the professor by reviewing material with students one-on-one or in small groups.
- Support professor in the development and implementation of teaching modules and projects.
- Marking of Exams, Quizzes, Assignments and Lab Reports.

Academic & Vocational Qualifications

Ph.D. in Electrical and Computer Engineering
January 2020 - Current

The University of British Columbia *Vancouver, Canada*

- Thesis: Improving lifelong learning of Deep Neural Nets with focus on Medical Image Analysis.
- CGPA: 91%

Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practice.
August 2018 – May 2019

Northern Council for Further Education (NCFE) *Sharjah, UAE*

- Funded by Higher College of Technology as part of Professional Development.

Level 3 Award in Assessing Vocationally Related Achievement

August 2017 – May 2018

Northern Council for Further Education (NCFE)

Sharjah, UAE

- Funded by Higher College of Technology as part of Professional Development.

Master of Science in Electrical and Computer Engineering

September 2013 – June 2015

Khalifa University

Abu Dhabi, UAE

- Thesis: An ECG Signal Processor for the Prediction of Ventricular Arrhythmia.
- CGPA: 3.7/4.0

Bachelor of Science in Communication Engineering

September 2009 – June 2013

Khalifa University

Abu Dhabi, UAE

- CGPA: 3.96/4.0 (Excellent with Highest Honor)

Publications

CONFERENCE PAPERS:

— **Nourhan Bayasi**, Siyi Du, Ghassan Hamarneh, and Rafeef Garbi. (2023). Continual-GEN: Continual Group Ensembling for Domain-agnostic Skin Lesion Classification. In proceedings of the International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI) Workshop (Eighth ISIC Skin Image Analysis).

— Siyi Du, **Nourhan Bayasi**, Ghassan Hamarneh, and Rafeef Garbi. (2023). AViT: Adapting Vision Transformers for Small Skin Lesion Segmentation Datasets. In proceedings of the International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI) Workshop (Eighth ISIC Skin Image Analysis) [***Best Paper Award***]

— Siyi Du, **Nourhan Bayasi**, Ghassan Hamarneh, and Rafeef Garbi. (2023). MDViT: Multi-domain Vision Transformer for Small Medical Image Segmentation Datasets. In proceedings of the International Conference on Medical Image Computing and Computer Assisted Intervention (MICCAI).

— Siyi Du, Ben Hers, **Nourhan Bayasi**, Ghassan Hamarneh, and Rafeef Garbi. (2022). FairDisCo: Fairer AI in Dermatology via Disentanglement Contrastive Learning. In proceedings of European Conference on Computer Vision (ECCV) Workshops [***Best Paper Award***]

— **Nourhan Bayasi**, Ghassan Hamarneh, Rafeef Garbi. (2022). BoosterNet: Improving Domain Generalization of Deep Neural Nets Using Culpability-Ranked Features. In Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR). PP 538-548.

— **Nourhan Bayasi**, Ghassan Hamarneh, Rafeef Garbi. (2021). Culprit-Prune-Net: Efficient Continual Sequential Multi-Domain Learning with Application to Skin Lesion Classification. Springer. In proceedings of Medical Image Computing and Computer Assisted Intervention (MICCAI). PP 165-175.

— Temesghen Tekeste, **Nourhan Bayasi**, Hani Saleh, Ahsan Khandoker, Baker Mohammad, Mahmoud Al-Qutayri, Mohammed Ismail. (2015). Adaptive ECG Interval Extraction. In proceedings of IEEE International Symposium on Circuits and Systems (ISCAS). PP 998-1001.

— **Nourhan Bayasi**, Temesghen Tekeste, Hani Saleh, Baker Mohammad, Mohammed Ismail. (2015). A 65-nm Low Power ECG Feature Extraction System. In proceedings of IEEE International Symposium on Circuits and Systems (ISCAS). PP 746-749.

— **Nourhan Bayasi**, Hani Saleh, Baker Mohammad, Mohammed Ismail. (2014). 65-nm ASIC Implementation of QRS Detector based on Pan and Tompkins Algorithm. In proceedings of the International Conference on Innovations in Information Technology (IIT). PP 84-87.

— **Nourhan Bayasi**, Temesghen Tekeste, Hani Saleh, Ahsan Khandoker, Baker Mohammad, Mohammed Ismail. (2014). Adaptive Technique for P and T Wave Delineation in Electrocardiogram Signals. In the 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBS). PP 90-93.

— **Nourhan Bayasi**, Hani Saleh, Baker Mohammad, Mohammad Ismail. (2013). The Revolution of Glucose Monitoring Methods and Systems: A Survey. In the IEEE 20th International Conference on Electronics, Circuits, and Systems (ICECS). PP 92-93.

JOURNALS:

— **Nourhan Bayasi**, Temesghen Tekeste, Hani Saleh, Ahsan H. Khandoker, Baker Mohammad, Mohammed Ismail. (2019). A Novel Algorithm for the Prediction and Detection of Ventricular Arrhythmia. Analog Integrated Circuits and Signal Processing (Springer). PP 413–426.

— **Nourhan Bayasi**, Temesghen Tekeste, Hani Saleh, Baker Mohammad, Ahsan Khandoker, Mohammed Ismail. (2015). Low-power ECG-based Processor for Predicting Ventricular Arrhythmia. IEEE Transactions on Very Large Scale Integration (VLSI) Systems. 24(5): 1962-1974.

BOOK/BOOK CHAPTERS:

— Hani Saleh, **Nourhan Bayasi**, Baker Mohammad, Mohammed Ismail. (2018). Self-powered SoC Platform for Analysis and Prediction of Cardiac Arrhythmias. Springer.

— Mohammad Alhawari, Dima Kilani, Temesghen Habte, Yonatan Kifle, **Nourhan Bayasi**, Nicholas Halfors, Baker Mohammad, Hani Saleh, Mohammed Ismail. (2019). Self-Powered SoC Platform for Wearable Health Care. The IoT Physical Layer. Springer.

US PATENTS:

— **Nourhan Bayasi**, Temesghen Habte, Hani Saleh, Ahsan Khandoker, Mohammed Ismail. (2020). Medical Device and Method for Detecting a Ventricular Arrhythmia Event. United States. Patent no. 10548499. Issued.

— Temesghen Habte, **Nourhan Bayasi**, Hani Saleh, Ahsan Khandoker, Baker Mohammad, Mahmoud Al-Qutayri, Mohammed Ismail. (2019). Medical Device having Automated ECG Feature Extraction. United States. Patent no. 10194821. Issued.

— **Nourhan Bayasi**, Temesghen Habte, Hani Saleh, Ahsan Khandoker, Mohammed Ismail. (2017). Medical Device for Detecting a Ventricular Arrhythmia Event. United States. Patent no. 9717438. Issued.

Honors & Awards

2023	**Best Paper Award**, ISIC MICCAI Workshop	*Canada*
2022	**Best Paper Award**, ISIC EECV Workshop	*Canada*
2022	**Vanier Scholarship, Canada's most prestigious scholarship**, NSERC	*Canada*
2022	**Four Year Fellowship (4YF) for PhD Studies**, UBC	*Canada*
2021	**Dr. and Mrs. Brandwajn Graduate Award in Electrical and Computer Engineering Award**, UBC	*Canada*
2021	**Faculty of Applied Science Graduate Award**, UBC	*Canada*
2021	**President's Academic Excellence Initiative PhD Award**, UBC	*Canada*
2020-22	**International Student Award**, UBC	*Canada*
2021	**Travel Award**, Recipient of MICCAI Student Travel Grant.	*France*
2020	**Scholarship Award**, PhD Studies, The University of British Columbia.	*Canada*
2016	**Best Paper Award**, IEEE Transactions on Very Large Scale Integration.	*Canada*
2013	**Best Poster Award**, 1st Place, Undergraduate Research Conference on Applied Computing, Zayed University.	*UAE*
2013	**Best Prototype Award**, 2nd Place, Engineering Student Renewable Energy Competition, UAE University.	*UAE*
2013	**Leadership Award**, Best Student Category, Khalifa University.	*UAE*
2013-15	**Scholarship Award**, Master Studies, Khalifa University.	*UAE*
2009-13	**President List Award**, College of Engineering, Khalifa University.	*UAE*
2009-13	**Scholarship Award**, Bachelor Studies, Khalifa University .	*UAE*

Other Activities

2019	**Workshop Organizer**, Tips on Moving from Academia to Vocational Education, Higher Colleges of Tech.	*UAE*
2017	**Electronics Expert**, Emirates Skills National Competition	*UAE*
2015-17	**Standard Leader**, AdvancED Academic Accreditation, Institute of Applied Technology	*UAE*
2016	**STREAM Program Developer**, Engineering, Institute of Applied Technology	*UAE*
2009-13	**Chairman**, IEEE Khalifa University Student Branch	*UAE*

Computer Skills

OS	Windows, MAC
Software Programming	Python, Matlab, C++
Hardware Programming	Synopsys Custom Flow, Verilog, SystemVerilog
Simulation	Tinkercad, Multisim, Simulink

Personal Information

Status in Canada	Permanent Resident
Place and DOB	Syria, 1992-Jan-15
Marital Status	Married