

NILOUFAR YOUSEFI

niloufar.yousefi@utoronto.ca ◇ LinkedIn

EDUCATION

University of Toronto, Canada

September 2023- 2027 (expected)

Ph.D. Candidate, Electrical Engineering- Systems Control

GPA: 3.74/ 4.00

Thesis: Estimator-based Performance Enhancement for Feedback-based Optimization

Supervisor: Prof. John W. Simpson Porco

Queen's University, Canada

September 2021- 2023

M.Sc. of Electrical Engineering- Power Electronics

GPA: 4.23/4.3

Thesis Title: Neural Network-based Model Predictive Controller for Modular Multilevel Converter

Supervisor: Prof. Alireza Bakhshai

Isfahan University of Technology, Iran

September 2017- 2021

B.Sc. of Electrical and Computer Engineering- Control Engineering

GPA: 3.97/4

Thesis Title: Classification with Deep Learning and Its Implementation on Raspberry Pi

Supervisor: Prof. Iman Izadi

RESEARCH INTERESTS

Optimization

Nonlinear Control

Power Systems

Machine Learning

Model Predictive Control

PUBLICATIONS

Niloufar Yousefi, Javad Ebrahimi, Alireza Bakhshai, "Auto-tuned Model Predictive Control-based Neural Network Controller for Modular Multilevel Converter", *IECON 2023-49th Annual Conference of the IEEE Industrial Electronics Society*, DOI: 10.1109/IECON51785.2023.10312231

Niloufar Yousefi, Javad Ebrahimi, Alireza Bakhshai, "Neural Network Controller Based on Direct and Indirect Model Predictive for Modular Multilevel Converters," *2023 25th European Conference on Power Electronics and Applications (EPE'23 ECCE Europe)*, DOI: 10.23919/EPE23ECCEurope58414.2023.10264657

Niloufar Yousefi, Javad Ebrahimi, Alireza Bakhshai, "Artificial Intelligence Applications in the Control and Performance Improvement of Modular Multilevel Converters: A Review", *IECON 2023-49th Annual Conference of the IEEE Industrial Electronics Society*, DOI:10.1109/PEDS57185.2023.10246700

VOLUNTEERING

IEEE Student Branch Chair, Queen's University

February 2022- 2023

GECE MASC Representative, Queen's University

September 2022- 2023

SCHOLARSHIPS

Recipient of 2023 Parya scholarship, Queen's University

Recipient of the grant for undergraduate studies, Isfahan University of Technology

SKILLS

Languages & Frameworks

C, Python, MATLAB, Verilog, Ladder Logic, Assembly, TensorFlow, Keras, NumPy

Applications & Tools

PSIM, PSCAD, Simulink, CodeVisionAVR, Proteus, OrCAD, STEP 7, L^AT_EX

SELECTED COURSES AND CERTIFICATES

Electric Energy Systems Analysis (19.3/20)

Microgrids (A+)

Convex Optimization (B+)

Linear Control Theory (A+)

Advanced Control Systems (18.5/20)

Digital Control Systems (19.5/20)

High Power Electronics (A+) **Deep Learning Specialization by DeepLearning.AI** (Coursera Certificate)

Machine Learning by Stanford University (Coursera Certificate)

EXPERIENCE

Undergraduate Mentor, University of Toronto

Had the opportunity to mentor undergraduate students with their thesis: Jonathan Milner, Katerina Vovk

Teaching Assistant, University of Toronto

ECE 216 - Signals and Systems

Winter 2024, 2025

ECE 311 - Introduction to Control Systems

Winter 2024, 2025

ECE 356 - Introduction to Control Theory

Winter 2025

ECE 349 - Introduction to Energy Systems

Fall 2024

ECE 557 - Linear Control Theory

Fall 2024

Course Development Assistant, Queen's University

Summer 2023

MREN 348 - Introduction to Robotics - Preparing lab and project material for the course

Teaching Assistant, Queen's University

ELEC 333 - Electric machines lab and tutorial TA

Winter 2022 and 2023

ELEC 221 - Electric circuits marking TA

Fall 2022

Math and Science Tutor, Paper Company

June 2022- August 2024

Helping students with their mathematics and physics problems

PROFESSIONAL AFFILIATIONS

Student Member, Institute for Electrical and Electronics Engineers (IEEE)

Student Member, IEEE Control Systems Society (IEEE CSS)