

## ELECTRICAL ENGINEER

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I am a dedicated Electrical Engineer with a strong academic background and hands-on experience in both research and practical applications. Currently pursuing a Ph.D. in Electrical Engineering and Computer Science at York University, my research focuses on developing advanced on-board EV chargers with V2X capability and reliable State of Charge (SoC) estimation techniques under the guidance of Prof. Houshang Karimi. My academic journey includes an M.Sc. in Electrical Engineering from Sharif University of Technology, where I developed an innovative estimation technique using PMU measurements and advanced filtering algorithms, and a B.Sc. from the University of Kashan, where I optimized photovoltaic systems through MPPT algorithms. My professional experience includes an internship at Damvand Power Plant, the largest power plant in the Middle East at the time, where I gained valuable insights into various operational aspects of power generation.

## EDUCATION

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<b>York University</b> <i>Ph.D. Student in Electrical Engineering and Computer Science. <b>GPA: A<sup>+</sup></b></i>	Toronto, Canada 2023 - Present
<b>Sharif University of Technology</b> <i>M.Sc. in Electrical Engineering. <b>GPA: 17 out of 20</b></i>	Tehran, Iran 2019 - 2022
<b>University of Kashan</b> <i>B.Sc. in Electrical Engineering. <b>GPA: 16 out of 20</b></i>	Isfahan, Iran 2014 - 2019

## TECHNICAL SKILLS

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- **Programming Languages & Scripting:** Python, C, MATLAB, HTML, CSS, Bash scripting
- **Machine Learning and Neural Networks:** Proficient in machine learning algorithms (supervised, unsupervised learning), deep learning techniques, and neural networks, with applications in SOC estimation and battery management systems in electric vehicles.
- **Hardware/Embedded Systems:** Arduino, ARM Cortex-M Development Platform (FRDM-KL43Z), Proteus, CodeVision,
- **Software Tools:** Simulink, Matpower, PSIM, DlgSILENT, EMTF
- **Electrical Engineering Expertise:** Power Systems, Power Electronics
- **Technical Writing & Office Tools:** LaTeX, Microsoft Office, Linux

## RESEARCH INTEREST

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- **General Areas:** Power Electronics, Power Systems, Smart Grids, Renewable Energy Systems, Control Systems
- **Specialized Areas:** EV on-board chargers, EV off-board Super-fast chargers, SOC and SOH estimation of Li-ion Batteries

## RESEARCH & WORK EXPERIENCE

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<b>Research and Teaching Assistant</b> <i>York University</i>	2023 - Present <i>Toronto, Canada</i>
<ul style="list-style-type: none"><li>• Serving as a Teaching Assistant for multiple courses, including Python Programming, Electrical Circuits for Mechanical Engineers, and Embedded Systems. As a Research Assistant, I am focused on my PhD thesis, which involves developing on-board EV chargers with V2X capability and advanced State of Charge (SoC) estimation techniques to optimize V2X operations. My research is conducted under the supervision of Prof. Houshang Karimi.</li></ul>	
<b>MSc Thesis</b> <i>Sharif University of Technology</i>	2019 - 2022 <i>Tehran, Iran</i>
<ul style="list-style-type: none"><li>• Developed an advanced estimation technique using PMU measurements, combining the Robbins-Monro algorithm with Kalman filtering for simultaneous state and parameter estimation. This method enhances convergence speed and robustness against measurement noise. Validated on a two-area, four-machine power network, it demonstrated faster and more accurate results under dynamic conditions, with significant implications for improving grid reliability and stability. Research conducted under the supervision of Prof. Mostafa Parniani.</li></ul>	

## BSc Thesis

University of Kashan

2019  
Tehran, Iran

- Completed a Bachelor's thesis on Maximum Power Point Tracking (MPPT), where I designed and implemented advanced algorithms to optimize energy extraction from photovoltaic systems.

## Intern

Damvand Power Plant

2018  
Tehran, Iran

- Completed an internship at Damvand Power Plant Combined Cycle Power Plant, once the largest power plant in the Middle East, gaining hands-on experience across various operational areas.

## Miscellaneous Technical Projects

Sharif University of Technology & University of Kashan

2018-2021  
Iran

- **Advanced LED Simulation and Smart Grid Research**
  - \* Developed and executed simulations for LEDs with varying capabilities using **CodeVisionAVR** for coding and **Proteus** for simulation, optimizing performance and functionality.
  - \* Conducted extensive research on Smart Grid technology, focusing on implementation strategies and future roadmaps. Compiled findings into a comprehensive **50-page report**, detailing methodologies, results, and recommendations for advanced grid management.

## HONORS

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- **2022:** Achieved an average CGPA exceeding both the departmental and university averages at Sharif University of Technology, ranking among the top MSc students.
- **2019:** Attained a prestigious rank of **26<sup>th</sup> out of 21,138** participants in the nationwide MSc entrance exam for **Power Systems**, administered by the Ministry of Science, Research, and Technology.
- **2019:** Secured a notable position of **35<sup>th</sup> out of 21,138** participants in the nationwide MSc entrance exam for **Power Electronics**, administered by the Ministry of Science, Research, and Technology.
- **2018:** Honored as a Potentially Talented Student at Kashan University, allowing direct entry into the MSc program without the Kunkor entrance exam.

## PBLICATIONS

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- 1 M. Mahdioussef, S. M. Hoseinizadeh, and H. Karimi, "A Robust Control Strategy in Stationary Frame for Grid-Supporting Voltage Source Converters Under Weak Grid Conditions," in *Proc. 2024 IEEE Power & Energy Society General Meeting (PESGM)*, Toronto, ON, Canada, 2024.
- 2 M. M. Yousef, M. Parniani, "Dynamic State Estimation in Power Systems Using Wide Area Measurement System (WAMS) Data," M.S. thesis, Sharif University of Technology, Tehran, Iran, 2022.