

Mohamad Chehade

PH.D. STUDENT · ELECTRICAL AND COMPUTER ENGINEERING

The University of Texas at Austin

✉ chehade@utexas.edu | 🏠 www.mohamadchehade.com | 🔗 https://www.linkedin.com/in/mfhchehade/

Education

The University of Texas at Austin

Austin, Texas

PH.D. IN ELECTRICAL AND COMPUTER ENGINEERING

Aug. 2023 - Present

- Advisor: Dr. Hao Zhu
- Research Interest: Risk-aware Transfer in Reinforcement Learning, Physics-aware Supervised Learning, Large Language Model Alignment
- Relevant Courses: Applied Stochastic Processes, Reinforcement Learning, Learning-based Optimal Control, Statistical Machine Learning, Generative AI, Applied Machine Learning, Convex Optimization, Energy Optimization and Operation

American University of Beirut

Beirut, Lebanon

B.ENG. IN ELECTRICAL AND COMPUTER ENGINEERING

Aug. 2019 - Jun. 2023

- GPA: 4.25/4.00
- Focus Area: Power and Energy Systems
- Minor in Mathematics
- Final Year Project: Optimal Power Flow via Machine Learning (Advisor: Dr. Rabih Jabr)
- Research Project: Microgrid Sizing using Ordinal Optimization (Advisor: Dr. Sami Karaki)
- Relevant Graduate Courses: Power System Planning, Renewable Electric Energy, Advanced Optimization

Experience

Los Alamos National Laboratory - T-5 Applied Mathematics and Plasma Physics Group

Los Alamos, NM

GRADUATE RESEARCH ASSISTANTSHIP (GRA) - ADVISOR: DR. RUSSELL BENT

May. 2025 - Aug. 2025

- Continued research on the verification of neural networks in physical and safety-critical systems
- Extended and tested algorithms for determining large verifiable input regions of neural networks

Los Alamos National Laboratory - T-5 Applied Mathematics and Plasma Physics Group

Los Alamos, NM

GRADUATE RESEARCH ASSISTANTSHIP (GRA) - MENTORS: DR. WENTING LI, DR. BRIAN BELL

Jun. 2024 - Aug. 2024

- Worked on the verification of neural networks in physical and safety-critical systems
- Developed two algorithms for determining large verifiable input regions of neural networks

University of Connecticut - Center for Clean Energy Engineering - PEARL Lab

Storrs, CT

RESEARCH INTERNSHIP - ADVISOR: DR. ALI BAZZI

Jun. 2022 - Aug. 2022

- Worked with Ward Leonard, a leading industrial motor manufacturing company
- Developed a fault diagnosis algorithm for power electronic inverters using combinational logic
- Optimized and constructed the inverter circuit for high-power testing using mixed-integer linear programming

OTB Consult

Beirut, Lebanon

ENERGY RESEARCH

May 2022 - Jun. 2022

- Collaborated with UNDP for conducting site reviews and surveys for the installation of solar solutions in Beirut
- Reviewed and developed technical notes on standards related to solar photovoltaics (PV)
- Researched relevant solar energy installations for a project in Iraq
- Researched plastic recycling mechanisms and applications

Swiss Federal Institute of Technology Lausanne (EPFL)

TECH4IMPACT SUMMER SCHOOL

Lausanne, Switzerland

Jun. 2021 - Sep. 2021

- Selected among 40 students from around the world
- Worked in a team of 4 students under the guidance of a renowned NGO
- Challenge: energy access for organizations in displacement settings
- Carried research on the topic and interviews with key experts in the field
- Developed the solution of Smart Solar Mini-Grids controlled by an algorithm and financed by Power Purchase Agreements
- **Achievement:** pitched this solution at a public event, and the team won the “Best Pitch” award out of 10 groups

American University of Beirut (AUB)

STUDENTS FOR SUSTAINABLE ENERGY FOR ALL (SSEA) CLUB

Beirut, Lebanon

2021 - 2023

- Supervised the student-led initiative “Sustainable Buildings on Campus” responsible for energy projects on campus
- Designed solar-powered benches for outdoor device charging
- Developed an air-conditioning control system for classes and faculty offices
- Analyzed the feasibility of installing LED lamps in the engineering building

Publications

PUBLISHED

Chehade, M., Cho, Y.-H., Chinchali, S., & Zhu, H. (2024). Should We Use Model-Free or Model-Based Control? A Case Study of Battery Control. *2024 56th North American Power Symposium (NAPS)*, El Paso, TX, USA, pp. 1–5. doi:10.1109/NAPS61145.2024.10741791.

Chehade, M., & Karaki, S. (2025). BOOST: Microgrid Sizing Using Ordinal Optimization. *2025 IEEE Texas Power and Energy Conference (TPEC)*, College Station, TX, USA, pp. 1–4. doi:10.1109/TPEC63981.2025.10907217.

ACCEPTED

Chehade, M., Li, W., Bell, B. W., Kazi, S. R., Bent, R., & Zhu, H. (2025). LEVIS: Large Exact Verifiable Input Spaces for Neural Networks. *Proceedings of the 42nd International Conference on Machine Learning (ICML 2025)*.

Chehade, M., Ghosal, S. S., Chakraborty, S., Reddy, A., Manocha, D., Bedi, A. S., & Zhu, H. (2025). Inference-Time Alignment of LLMs via User-Specified Multi-Criteria Transfer Decoding. *Proceedings of the 42nd International Conference on Machine Learning (ICML 2025)*.

SUBMITTED FOR REVIEW

Chehade, M., Bedi, A. S., Chakraborty, S., Zhang, A., & Zhu, H. (2025). Test-Time Risk Adaptation with Mixture of Agents. Submitted to *NeurIPS 2025*.

IN PREPARATION

Cho, Y.-H.*, **Chehade, M.***, Al Janahi, F.*, Lim, S.*, Mohammadi, J., & Zhu, H. (2025). Carbon-Aware Optimal Energy Management for PJM. In preparation for *2025 North American Power Symposium (NAPS)*.

*Equal contribution.

Skills

- **Programming Languages:** Python, MATLAB, C++, C, R, Java, C#, SQL
- **Software:** Simulink, SPICE, HOMER, PVSyst, MATPOWER, LabVIEW, AutoCAD, Microsoft Office Suite
- **Languages:** English, French, Arabic

Reviewer

- Sep. 2023 - Present **IEEE Transactions on Smart Grid**
- July 2024 - Present **Asilomar Conference on Signals, Systems, and Computers**
- Dec. 2024 - Present **Texas Power and Energy Conference (TPEC)**

Awards & Honors

- 2024 **Best Graduate Presentation Award at NAPS 2024**
- 2023 - Present **Cockrell School of Engineering Fellowship**
- 2023 **Mohamad Ali Safieddine Award for Academic Excellence** for ranking first across the AUB Maroun Semaan Faculty of Engineering and Architecture
- 2023 **ECE Distinguished Graduate Award** for ranking first among ECE graduates
- 2023 **Exceptional ECE Final Year Project Award** Power and Energy Systems
- 2021 **Best Pitch Award EPFL Tech4Impact Summer School**
- 2019 - 2023 **Dean's Honor List** AUB Maroun Faculty of Engineering and Architecture - every given semester

References

- Dr. Hao Zhu
Associate Professor, ECE Department, The University of Texas at Austin
✉ haozhu@utexas.edu
- Dr. Russell Bent
Technical Staff Member, Los Alamos National Laboratory
✉ rbent@lanl.gov
- Dr. Sandeep Chinchali
Assistant Professor, ECE Department, The University of Texas at Austin
✉ sandeepc@utexas.edu
- Dr. Amrit Singh Bedi
Assistant Professor, ECE Department, The University of Central Florida
✉ amritbedi@ucf.edu
- Dr. Brian Bell
Associate Professor, ECE Department, The University of Texas at Austin
✉ bwbell@lanl.gov
- Dr. Rabih Jabr
Professor and IEEE Fellow, ECE Department, American University of Beirut
✉ rj30@aub.edu.lb
- Dr. Ali Bazzi
Associate Professor, ECE Department, University of Connecticut
✉ bazzi@uconn.edu
- Dr. Sami Karaki
Professor, ECE Department, American University of Beirut
✉ skaraki@aub.edu.lb