Khaled Nakhleh

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RESEARCH EXPERIENCE AND EMPLOYMENT AVAILABILITY

Multi-agent reinforcement learning (MARL), large language models (LLMs), reinforcement learning from human feedback (RLHF). **Visa type:** permanent resident (green card holder) authorized to work for any employer immediately.

EXPERIENCE

Nokia Bell Labs Jun. 2022 – Aug. 2022
AI Research Intern. Host: Dr. Matthew Andrews. (40 hours/week). Murray Hill, NJ

- **Trained and deployed** reinforcement learning agents for robots' local path planning in non-stationary environments.
- **Developed and tested** automation scripts for the Robot Operating System (ROS) to improve results' reproducibility.
- **Improved** the deployment performance of the RL local planner compared to the baselines (DWA, shortest path, DWA-RL).
- **Presented results** to Bell labs' research groups and researchers from Princeton, Rutgers, and Charles universities.

ECEN Department, Texas A&M University Jan. 2019 – present
Graduate Fellow/Research Assistant/Teaching Assistant. (20 hours/week). College Station, TX

- **Conducted** research as part of the computer engineering and systems' group (CESG).
- **Instructed lectures and lab sessions** for over 200 students of all classifications.

Q.M. Controls Jan. 2018 – May 2018
Applications Engineering Intern. (40 hours/week). Doha, Qatar

- **Scheduled and maintained** valve replacement shipments from Germany to Qatar.
- **Configured** valve systems for natural gas and HVAC systems' optimal flow.
- **Processed and presented** technical consultation to clients.

Samson Controls AG Oct. 2017 – Nov. 2017
Valve Sizing Intern. (40 hours/week). Frankfurt, Germany

- **Trained** on Samson valve sizing software, and determined clients ideal valve parameters.
- **Inspected** valve types, materials, actuator sizing techniques, and actuator models.

EDUCATION

Texas A&M University, College Station Jan. 2021 – Dec. 2025
PhD in Electrical Engineering. Main advisor: Prof. Ceyhun Eksin. Co-advisor: Prof. Sabit Ekin. College Station, TX

- **Coursework**: Machine learning, reinforcement learning, asymptotic statistics, data mining and analysis, game theory, analysis of algorithms, online decision-making and planning, stochastic systems, software engineering, internet protocols and modeling, computer communication and networking, design and analysis of communication networks.
- **Affiliation**: IEEE HKN honor society - IEEE robotics and automation society student member - IEEE student member.

Texas A&M University, College Station Aug. 2018 – Dec. 2020
MS in Electrical Engineering. College Station, TX

Texas A&M University at Qatar Aug. 2013 – May 2017
BSc in Electrical Engineering. Doha, Qatar

- **Minor**: Mathematics.

PUBLICATIONS

Conference Publications

1. **Khaled Nakhleh**, Sarper Aydin, Ceyhun Eksin, and Sabit Ekin. “Fictitious Play in Product Markov Games with Kullback-Leibler Control Cost”. *The IEEE 59th Asilomar conference on Signals, Systems, and Computers* (2025).
2. **Khaled Nakhleh**, Minhail Raza, Mack Tang, Matthew Andrews, Rinu Boney, Ilija Hadzic, Jeongran Lee, Atefeh Mohajeri, and Karina Palyutina. “SACPlanner: Real-World Collision Avoidance with a Soft Actor Critic Local Planner and Polar State Representations”. In: *2023 IEEE International Conference on Robotics and Automation (ICRA). IEEE*. 2023.
3. **Khaled Nakhleh** and I-Hong Hou. “DeepTOP:Deep Threshold Optimal Policy for MDPs and RMABs”. In: *Proceedings of the 36th Neural Information Processing Systems (NeurIPS) 2022*. 2022. (Acceptance rate: 25.6%).
4. Daojing Guo, **Khaled Nakhleh**, I-Hong Hou, Sastry Kompella, and Clement Kam. “A Theory of Second-Order Wireless Network Optimization and Its Application on AoI”. in: *IEEE INFOCOM 2022 - IEEE Conference on Computer Communications (INFOCOM 2022)*. London, United Kingdom (Great Britain), May 2022. (Acceptance rate: 19.9%).
5. **Khaled Nakhleh**, Santosh Ganji, Ping-Chun Hsieh, I-Hong Hou, and Srinivas Shakkottai. “NeurWIN: Neural Whittle Index Network For Restless Bandits Via Deep RL”. in: *Proceedings of the 35th Neural Information Processing Systems (NeurIPS) 2021*. 2021. arXiv: 2110.02128. (Acceptance rate: 25.6%).

Journal Publications

1. Daojing Guo, **Khaled Nakhleh**, I-Hong Hou, Sastry Kompella, and Clement Kam. “AoI, Timely-Throughput, and Beyond: A Theory of Second-Order Wireless Network Optimization”. *The IEEE\ACM Transactions on Networking (ToN) journal.* (2024).

Workshop papers

1. **Khaled Nakhleh**, Sarper Aydin, Ceyhun Eksin, and Sabit Ekin. “Fictitious Play in Product Markov Games with Kullback-Leibler Control Cost”. *Dynamics at the Frontiers of Optimization, Sampling, and Games Workshop at NeurIPS 2025.* (2025)

Under Review and Preprints

1. **Khaled Nakhleh**, Ceyhun Eksin, and Sabit Ekin. “Simulation-Based Optimistic Policy Iteration For Multi-Agent MDPs with Kullback-Leibler Control Cost”. *Under review at the IEEE Transactions on Automatic Control Journal, https://arxiv.org/abs/2410.15156* (2025).
2. **Khaled Nakhleh**, Sarper Aydin, Ceyhun Eksin, and Sabit Ekin. “Fictitious Play in Markov Games with Kullback-Leibler Control Cost”. *Preprint* (2024).
3. Daojing Guo, **Khaled Nakhleh**, Ping-Chun Hsieh, and I-Hong Hou. “Optimal Wireless Scheduling for Remote Sensing through Brownian Approximation”. *journal version.* (2021).

LEADERSHIP AND COMMUNITY SERVICE

External Reviewer (28 papers in total)

ACC 2025. IEEE CDC 2024. ICASSP 2024. ICLR 2024. NeurIPS [2025 - 2023 - 2022]. TPEC 2023. Automatica Journal. IEEE\ACM Transactions on Networking (ToN) Journal. IEEE Transactions on Automatic Control (TAC) Journal.

NeurIPS Conference Organizer 2022
Co-organizing the education outreach program for high school students. New Orleans, LA

Vice President of Finance Jan. 2020 – May 2025
Electrical and Computer Engineering Graduate Student Association (ECE-GSA). College Station, TX

CIRTL Associate & Academy for Future Faculty (AFF) Senior Fellow Jan. 2020 – May 2021
National Science Foundation’s Center for the Integration of Research, Teaching, and Learning (CIRTL). College Station, TX

Graduate and Professional Student Government (GPSG) Senator Feb. 2020 – May 2021
Electrical and Computer Engineering (ECEN) Department Senator. College Station, TX

TALKS

University of Texas, Austin Apr. 2025
Learning Kullback-Leibler Control in Multi-Agent Systems. Austin, TX

INFORMS Annual Meeting Oct. 2024
Simulation-Based Optimistic Policy Iteration For Multi-Agent MDPs with Kullback-Leibler Control Cost. Seattle, WA

INFORMS Optimization Society (IOS) 2024 Conference Mar. 2024
Simulation-Based Optimistic Policy Iteration For Multi-Agent MDPs with Kullback-Leibler Control Cost. Houston, TX

National Center for Educator Development (NCED) Students' Conference Mar. 2022
Introduction to LaTeX. Doha, Qatar

Texas A&M Computer Engineering & Systems' Group (CESG) Symposium Apr. 2021
NeurWIN: Neural Whittle Index Network For Restless Bandits Via Deep RL. College Station, TX

STUDENTS MENTORED

Austin Keith Aug. 2021 – May 2022
Undergraduate thesis: "Software-defined wireless network for real-time sensing". BSc in Electrical Engineering

NON-ACADEMIC PROJECTS

Software-Defined Networking (SDN) Integration with Named Data Networking (NDN) Jun. 2019 – Dec. 2020

- **Wrote** switches monitoring scripts for analyzing throughput and queue sizes.
- **Improved** the SDN Ryu controller for custom-built protocols and integrated LabView and NDN with OpenFlow's API.

Beyond 5G Challenge By The Air Force Research Laboratory (AFRL) Sept. 2021 – Apr. 2022

- **Proposed** a dynamic scheduling algorithm to minimize the age of information of sensory data.
- **Modified** a Software-Defined Network (SDN) controller to implement the algorithm in Python.

Force Request System For The Computer Science Department Jan. 2019 – Aug. 2019

- **Led** four teammates as SCRUM master in making a SaaS app for the computer science department at Texas A&M university.
- **Built** the app using Ruby on Rails as backend with A.W.S. and deployed using Heroku.

AWARDS & SKILLS

Awards

Texas A&M University electrical and computer engineering department travel grant ($2500 in value) (2025).
3^{rd} place in the Texas A&M University ISEN Department Poster Competition (2024).
Recipient of the national interest waiver (NIW) for U.S. permanent residency (2023).
IEEE International Conference on Robotics and Automation (ICRA) travel grant (2023).
Texas A&M ECEN department travel award (2023).
NeurIPS scholar award (2022).
Texas A&M ECEN department PhD merit fellowship (2021 - 2022).
Glenn and Deborah Renwick engineering scholarship from the university of Florida (declined).

Skills

Programming languages: Python [PyTorch, Keras, NumPy, Pandas, Matplotlib], C\C++[CMake], LabView, MATLAB, SQL[MySQL], AWK, Bash.
Tools: SLURM, Gurobi, Robot Operating System (ROS), NS-3, Git, Docker, AWS, HPRC, Unix, Kubernetes, LaTeX.
Languages: Fluent in Arabic and English.