

Zeina Nedal Barghouti

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EDUCATION

Massachusetts Institute of Technology

M.Sc. in Mechanical Engineering
Laboratory of Advanced Biopolymers

Expected: May 2023

Texas A&M University at Qatar

B.S. in Mechanical Engineering, Summa Cum Laude
Minor in Mathematics

May 2021

EXPERIENCE

Capstone Design & Undergraduate Research Scholar | *Texas A&M at Qatar*

Aug 2020-May 2021

Designed and fabricated a prototype self-feeding robotic manipulator device for patients in Sidra Hospital with upper body motor disabilities (in a team of 6). I developed the power subsystem and Arduino control of the device.

Research Experience for Undergraduates (REU) | *College Station, Texas*

May-Jul 2019

Performed materials science and engineering research on the topic of enhancing negative thermal expansion in shape memory martensite by designing and performing cyclic thermal tensile test experiments, as well as being introduced to X-ray diffractions and thermomechanical analysis. Published a research paper to *Acta Materialia*.

Writing Peer Tutor | *Center for Teaching and Learning, Texas A&M at Qatar*

Aug-Dec 2018

Tutored students in English Composition and Rhetoric, as well as provided writing consultation.

Qatar Petrochemical Company (QAPCO) Internship | *Doha, Qatar*

June 2020

Studied the process flows of the chemical plants in QAPCO, the workings of utilities required to run them, and articulated design solutions to many scenarios presented by the hosts, especially regarding safety analysis.

LEADERSHIP AND INVOLVEMENT

Student Government Association | *Vice President & Class Representative*

Jan 2017-May 2021

Acting as the formal voice of *Texas A&M at Qatar's* Class of 2021 within & outside the administration, since 2017, and was elected to lead a group of 16 Class Representatives and Chairs as Vice President in 2020. Helped and organized some of the biggest events on campus such as Aggie Ring Day, the Senior Gala, the Senior Walk, and Aggie Muster. Selected to attend the *Conference on Student Government Associations* in Houston, Texas.

Pi Tau Sigma Beta Zeta Honor Society | *President*

Aug 2020-May 2021

Facilitated the induction of 11 new members to the mechanical engineering honor society as President. Organized lecture series with industry employees and frequently communicated professional opportunities to the members.

Aggie Service Learning Experience (ASLE) | *Laos & Thailand*

May 2018-19

Participated as a student leader in *Laos* by programming, coordinating fundraisers and facilitating work on site to build adobe clay eco-bungalows for a local village. Practiced selfless service in *Thailand* by working with other Texas A&M students to build a cement brick house for a local who lost his home.

Student Engineers' Council (SEC) | *Vice President - Internal*

May 2018-19

Managed the internal matters of the largest student run organization at Texas A&M at Qatar, sponsored by Dolphin Energy, and a branch of the College Station student chapter. Oversaw the LIFE, Philanthropy, and Finance chairs.

SAE International | *Formula SAE Italy*

Aug 2017-Feb 2019

Worked with a student team in an effort to build Texas A&M at Qatar's first Formula SAE race car to compete in the Formula SAE competition, alongside working as the secretary for its respective student chapter.

Tau Beta Pi Honor Society | *Student Member*

Mar 2019-Present

Best Writing, Texas A&M at Qatar Best Writing | *Selection Committee Member*

Aug 2018-Dec 2019

Study Abroad Experience, Spring 2020 | *College Station, Texas*

Jan 2020-May 2020

Aggie Life 101 | *New Student Orientation Leader*

Aug 2018

Champe Fitzhugh International Honors Leadership Program | *Castiglione Fiorentino, Italy*

Jul 2017

SKILLS

Software | SolidWorks (Certified Associate), Python, MATLAB, Arduino, Granta EduPack, Microsoft Office
Languages | Native English, Fluent Arabic, Basic French

PUBLICATIONS

"In-situ Investigation of Anisotropic Crystalline and Bulk Negative Thermal Expansion in Titanium Alloys,"
Acta Materialia, 2021

"Using Engineering to Create a Self-Adaptive Feeding System for Patients with Upper Body Disabilities,"
Submitted to be published in the OAKTrust Digital Repository at Texas A&M, 2021

"Time Delay and Correlation Between Contractions of Biceps Brachii and Actual Arm Movement"
(Abstract), International Computational Science and Engineering Conference (ICSEC), Oct 2019

AWARDS & DISTINCTIONS	Qatar Foundation Merit Scholarship	Aug 2018-May 2021
	Undergraduate Research Scholar Distinction	May 2021
	Dean's Honor Roll	Nov 2020