Dadmehr Ghasemfar, Mechanical Engineer

Durham, United States, +1 (650) 720-8415, danielghasemfar@gmail.com

LINKS

Portfolio

PROFILE

Senior Mechanical Engineer at Duke University specializing in robotics, particularly bipedal humanoid design and MPC, with a profound passion for the field. Experience in aerospace engineering, coupled with minors in mathematics and psychology, enriching problem-solving capabilities. Dedicated to continual learning and innovation, with a dream of establishing a firm to channel boundless creativity into constant creation and design pursuits. Proven leadership in cutting-edge projects underscores a commitment to advancing the frontiers of robotics and controls, leveraging expertise in mathematical and computational modeling.

EMPLOYMENT HISTORY

Jul 2022 — Present

Duke Research Fellow, Duke General Robotics Lab

Durham

Working under Dr. Boyuan Chen, I specialize in real-time sound-wave propagation simulations using AI to analyze impact characteristics from recorded surface sound waves. Employing a point-based modeling approach with interconnected springs, I developed a GPU-accelerated 3D version in Python. Notably, the simulation is versatile, accommodating any 3D object shape, and allows configurable neighboring connections. Validation involved comparing the harmonic modes of Chladni plates to the simulated environment.

Sep 2020 — Mar 2021

Lab Technician, FPrin LLC

Mountain View

I designed and executed comprehensive test setups for client products, such as creating a specialized rig to test the activation force for a German insulin pen manufacturer. Additionally, I conducted extensive testing on springs and failure modes for the same client over several months. In my final months, I conceptualized, built, coded, and tested a self-balancing 2-wheeled robot named Balanciaga.

May 2020 — Sep 2020

Electrical Designs Lead, Null Designs LLC

Los Altos

In early 2020, my high school friend launched a startup aiming to improve keyboard design and manufacturing. I was hired to develop a keyboard PCB from scratch, utilizing the ATMEGA32 chip. Subsequently, I departed to pursue my undergraduate studies.

Nov 2022 — Present

Campus Food Delivery, GoBringIt

Durham

My part-time employement during my time studying at Duke University. Part of a work-study program.

Mar 2021 — Aug 2021

Barista, Starbucks

Alexandria

Brewed exceptional coffee for thousands of people. Part-time job to help pay tuition.

EDUCATION

Aug 2020 — May 2024

Bachelor of Science, Duke University

Durham

Graduate with distinction with a Pratt Research Fellowship, recognized for exceptional contributions to the field. Conducted four semesters of impactful research at the Duke General Robotics Lab under Dr. Boyuan Chen, showcasing expertise in mathematical and computational modeling of systems and controls. Actively engaged in extracurriculars, including the running club and outdoors adventures club, demonstrating a well-rounded commitment to academic and personal growth. Recognized Iranian Student Federation scholar.

Jul 2018 — Mar 2020

Research Student, Advanced Scientific Investigations

Mountain View

Participated in the ASI program, a public initiative aimed at identifying and training gifted high school students in STEM. Accepted in both junior and senior years, my projects included designing a convolutional neural network to detect forest fires in video feeds, earning recognition as a finalist in the CS division of the Synopsis Science Fair and a medal from the Mountain View mayor. In my second year, I worked on a thrust vector-controlled rocket for precise landings, but the project was cut short due to COVID-19.

SKILLS

Solidworks	Experienced	FEA Modelling	Experienced
MATLAB/Simulink	Experienced	Circuit/PCB Design	Skillful
AI	Experienced	Presentation and Communication	Expert
ROS and MPC	Skillful		

LANGUAGES

Farsi/Persian	Native speaker	Spanish	Good working knowledge

COURSES

Nonlinear Dynamics and Chaos Theory, Duke University

ODE's and PDE's, Duke University

Capstone: Mars Propulsion Research Group, Duke University

Aircraft Performance and Design, Duke University

Statics, Solids, and Materials, Duke University

REFERENCES

Dr. Boyuan Chen from Duke University

boyuan.chen@duke.edu · +1 919 660 5310

Dr. Pei Zhong from Duke University

pzhong@duke.edu · +1 919 660 5336