

# Basel Nitham Hindi

bh2807@columbia.edu · baselhindi.github.io · +1 (917) 594-1414

## EDUCATION

### Columbia University in the City of New York

Master of Science in Computer Science candidate; (3.80 Cumulative GPA)

New York, NY

Expected December 2023

### Texas A&M University – College of Engineering

Bachelor of Science in Mechanical Engineering;

College Station, TX

May 2018

## PROFESSIONAL EXPERIENCE

### Distributed Research Apprenticeship for Master's (DREAM Program) – Researcher

Jun 2022 – Present

- Conducted accessibility research within Columbia University's Computer Enabled Abilities Laboratory (CEAL).
- Developed a computer vision system for enhancing tennis gameplay understanding for blind/ low-vision users.

### Rheinmetall Barzan Advanced Technologies, Dept. of R&D – Software Engineer

Aug 2020 – Jul 2021

- Utilized Agile framework to develop C2 software features for a fleet of electrified autonomous unmanned ground vehicles (UGV) including collision avoidance, waypoint validation, actuator commands, and telemetry processing.
- Designed and implemented modular multi-process embedded software architecture with inter-process communication including marshalling and remote procedure calls.

### Sayarti – Co Founder, Doha, Qatar

Jan 2019 – Jul 2021

- Developed a car-sharing platform, complete with ECU hardware and IOS app integration for rental by the minute.
- Trained a Random Forest ML algorithm to value online car listings, in order to minimize fleet depreciation costs.

### Rheinmetall Barzan Advanced Technologies, Dept. of R&D – Jr. Mechanical Engineer

Jul 2018 – Aug 2020

- Conducted UGV hardware integration for sensors/actuators including 2D/3D LiDAR, 2D/3D radar, EO/IR camera.
- Designed and developed robust subsystem hardware to ensure vehicle functionality in harsh climate and terrain.

### BMW/ Rolls Royce, Alfardan Automobiles – Engineering Intern, Doha, Qatar

Jun 2017 – Aug 2017

- Received official BMW Group technical training alongside certified BMW and Rolls Royce technicians.

## RESEARCH AND PROJECTS

### Columbia University - AlQuraishi Laboratory - Research Assistant

Jan 2022 - Present

- Enhancing transformer-based GNNs for graph representation learning using DeepMind's AlphaFold architecture.
- Leveraging state-of-the-art rich input embeddings to predict molecular orbital energy gap.

### Texas A&M University – College of Engineering

Feb 2019 – Jul 2021

- Co-authored a journal paper, "Disturbance Observer Based Sliding Mode Controller for Flexible Manipulators".

### Qatar Environment and Energy Research Institute – Research Intern, Doha, Qatar

May 2016 – Aug 2016

- Published a paper titled "Performance Assessment of Stand Alone Bifacial Solar Panel Under Real Time Conditions" in 44<sup>th</sup> IEEE Photovoltaic Specialists Conference.

## AWARDS

### Texas A&M University at Qatar –Graduation Ceremony Student Speaker; Doha, Qatar

May 2018

### Texas A&M University at Qatar –Mechanical Engineering Student of the Year Award; Doha, Qatar

Apr 2018

### Pi Tau Sigma –Mechanical Engineering Honors Society (top 25% of Mech. Eng. students)

2017-Present

## SKILLS

### Languages:

English (native, full proficiency), Arabic (fluent, working proficiency)

### Technical Skills:

Git, SolidWorks, TensorFlow, PyTorch, OpenCV, Wireshark, Google Protobuf, ZeroMQ, LabView

### Programming:

Java, C++, Python, MATLAB, LATEX