

# Basel Nitham Hindi

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## EDUCATION

### Columbia University in the City of New York

Master of Science in Computer Science candidate | 3.78 Cumulative GPA

Thesis Advisor: Dr. Brian A. Smith, Computer-Enabled Abilities Laboratory;

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

Bachelor of Science in Mechanical Engineering;

New York, NY

Expected Dec 2023

College Station, TX

May 2018

## PROFESSIONAL EXPERIENCE

### 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

- Built 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 integrated 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 - Computer-Enabled Abilities Laboratory – Researcher, MS Thesis

Jun 2022 – Present

- Leveraging the COSMOS smart streetscapes testbed to produce a hyper-precise outdoor localization solution for Blind/Low-Vision pedestrians, complete with CV/ DL-based person detection, tracking, and obstacle avoidance.
- Published “Towards Accessible Sports Broadcasts for Blind and Low-Vision Viewers” in Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI 2023, Extended Abstracts). [PDE](#) (preprint)
- Modified and trained DCNN models for detecting tennis game attributes, along with player positions and actions.

### Columbia University - AlQuraishi Laboratory - Research Assistant

Jan 2022 - Present

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

### 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, Python, C++, MATLAB, LATEX