Basel Nitham Hindi

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EDUCATION

Columbia University in the City of New York   New York, NY
Master of Science in Computer Science candidate | 3.80 Cumulative GPA   Expected Dec 2023
Thesis Advisor: Dr. Brian A. Smith, Computer-Enabled Abilities Laboratory;

Texas A&M University – College of Engineering   College Station, TX
Bachelor of Science in Mechanical Engineering;   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.
- Co-authored a paper titled "Sports Accessibility from Pixels: Enhancing Tennis Gameplay Understanding of Blind and Low Vision Viewers".
- 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 44th 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