Mohsin Haider

EDUCATION

Duke University, Pratt School of Engineering *Expected May 2022*
B.S.E Mechanical Engineering, Innovation and Entrepreneurship Certificate
- *Cumulative GPA*: 3.8/4.0

EXPERIENCE

Smartphone-Controlled Electric Skateboard *Durham, NC*
Designer and Fabrication Engineer *Sep 2019—Present*
- Used Fusion 360 and waterjet to rapidly iterate a motor attachment for Penny® boards that can be controlled over Arduino-enabled Bluetooth using the volume buttons on a smartphone.

DesignHub, Duke University *Durham, NC*
Design Engineer *Aug 2019—Present*
Rapidly prototyped as a contract engineer for internal Duke clients pursuing research or entrepreneurial ventures. Consultant for faculty, staff, and students on SolidWorks, Fusion 360, CAM, and design.

Project: Eye Forceps *Nov 2019—Present*
- Designed and 3D-printed prototypes of an improved cataract surgery tool in SolidWorks.
- Collaborated with an ophthalmologist to meet design constraints of the operation.
- Used FEA Simulation in SolidWorks to generate animations for idea communication.

Project: Smart Toilet Seat *Jun 2019—Present*
- Designed 3D models and milled prototypes of a patent-pending device that tracks hospital patients' urinary and stool patterns using sensors and machine learning algorithms.
- Used Fusion 360 to design and 3D-print custom sensor fittings, seat hinges, and mechanisms.
- Project received over $200k in seed funding from NC Biotech and Duke Coulter grants.

Pratt School of Engineering, Duke University *Durham, NC*
Lab Teaching Assistant for EGR101 *Aug 2019 — Present*
- Advised first-year students on design choices for their client-based design projects.
- Managed and performed individual and group safety demonstrations on power tools.

Automatic Skunk Feeder, Museum of Life and Science *Durham, NC*
Fundamental Engineering Design Class *Aug 2018—Dec 2018*
- Collaboratively created a set of Arduino-automated food dispersal devices for captive animals.
- Communicated with museum staff to create a naturalistic and safe feeding method.

Innovation Co-Lab Studio, Duke University *Durham, NC*
Student Technician *Aug 2018—Aug 2019*
- Troubleshooted and maintained fleet of 75 3D printers in Duke University's Co-Lab Studio.
- Demonstrated proper usage of laser cutters and milling machines to faculty, staff, and students.

SKILLS AND EXPERTISE

- **Design:** SolidWorks, Fusion 360, FEA, Simulation, CAM, CNC Milling, 3D Printing, Laser Cutting, Waterjet, Illustrator
- **Programming**: Python (*Intermediate*), Arduino (*Intermediate*), MATLAB (*Beginner*), GitHub, Heroku
- Flexibility, Problem-Solving, Communication, Collaboration

RELEVANT COURSEWORK

- Fundamental Engineering Design
- Engineering Innovation
- Computational Methods
- Differential Equations
- Statics
- Dynamics

INTERESTS

- Medical Devices
- Medical Technology
- Consumer Products
- Human-Centered Design
- Soccer
- Gaming