

# Mohsin Haider

## EDUCATION

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### Duke University, Pratt School of Engineering

B.S.E Mechanical Engineering, Innovation and Entrepreneurship Certificate

*Expected May 2022*

*Cumulative GPA: 3.86/4.0*

- *Activities:* This Engineering Life Podcast, Student Founders

## EXPERIENCE

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### Blur Product Development

*Cary, NC*

*R&D Engineering Intern*

*May 2020—Present*

- Designed a stepper motor-based test fixture in SolidWorks for use in virus and bacteria labs.
- Designed an additional test fixture in SolidWorks for testing long term UV exposure effects.
- Generated BOMs and engineering drawings, communicating with machinists and manufacturers.

### Smartphone-Controlled Electric Skateboard

*Durham, NC*

*Designer and Fabrication Engineer*

*Sep 2019—Present*

- Used Fusion 360, waterjet cutting, and CNC milling to design and manufacture a custom Bluetooth-enabled motor attachment for Penny® skateboards.
- Created iOS app to interface with Arduino in order to control the motor attachment.

### 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, Duke Eye Center**

*Aug 2020—Present*

- Optimized ultrasound probe cover design for ergonomic comfort of sonographers.
- Identified appropriate materials and manufacturing methods for low-scale production.

#### **Project: Eye Forceps, Duke Eye Center**

*Nov 2019—Mar 2020*

- Designed and 3D-printed prototypes of an improved cataract surgery tool in SolidWorks.
- Collaborated with an ophthalmologist to meet design constraints of the operation.

#### **Project: Smart Toilet Seat, The David Lab at Duke University**

*Jun 2019—Present*

- Used Fusion 360 and SolidWorks FEA to design a patent-pending medical device.
- Created enclosures for and calibrated optical, sound, and load sensors.

### 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

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### Skills and Technical Knowledge

- **Design:** SolidWorks, Fusion 360, CAD, FEA, DFM, DFA, CAM, CNC Milling, 3D Printing, Laser Cutting, Waterjet
- **Programming:** Python (*Intermediate*), Arduino (*Intermediate*), MATLAB (*Beginner*), GitHub, Heroku
- **Soft Skills:** Flexibility, Problem-Solving, Communication, Collaboration, Interdisciplinary Work.

### Relevant Coursework

- Fundamental Engineering Design, Engineering Innovation, Analysis, Statics, Dynamics, Controls, Thermodynamics

### Interests

- Product Design, Consumer Products, Mechanical Design, Music Production, Soccer, Gaming, Skateboarding