# Pranav Gupta

*Great Falls, VA*

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As a current college student pursuing dual majors in Mechanical Engineering and Computer Science, my objective is to leverage my strong analytical skills and interdisciplinary knowledge to contribute to innovative projects and solutions. With a proficiency in deconstructing complex problems and synthesizing diverse solutions, I am committed to optimizing designs and enhancing project outcomes. My aim is to apply my expertise and passion for problem-solving to make meaningful contributions in a dynamic professional setting.

## Education

### Duke University
**Aug 2023 - May 2027**

***Bachelor of Science in Engineering***
*Durham, NC*

- **Mechanical Engineering and Computer Science Double Major.**

## Technical Skills

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|---|---|
| **Programming Languages** | Java, Python, C, C++, HTML/CSS |
| **Design** | Solidworks + Solidworks FEA, Fusion 360 CAD and CAM, Onshape |
| **Manufacturing** | Manual Machining, Rapid Prototyping, Injection Molding, MIG Welding, Water Jetting, 3D Printing, Laser Cutting |
| **Analysis** | ANSYS Workbench |
| **Other** | Microsoft Office, PC and Mac Software maintenance, Computer Hardware assembly |

## Engineering Experience

### Duke Motorsports
**Sep 2023 - Present**

***Powertrain Engineer***

- Utilized Solidworks and ANSYS to design a custom intake manifold that increased horsepower by 10% by creating even and faster airflow to engine cylinders.
- Manufactured custom fuel rail that resulted in more even fueling between engine cylinders.

### The George Washington University
**June 2024 - Present**

***Summer Computer Science Researcher***

- Created a novel LLM built from ChatGPT API that is capable of determining the best flight plan given certain parameters.
- Assisted in optimizing an A* pathfinding algorithm to determine the best UAS flight plan rerouting given wind hazards.
- Developed an algorithm for Vision-Based Perception with Safety Awareness for UAS Autonomous Landing
- Developed a novel algorithm to train an autonomous driving RL+LLM framework using CARLA

### Duke University
**Jan 2024 - Present**

***LabRAT***

- Advised 30+ engineering students on various academic projects for EGR101 and EGR121.
- Maintained 3D printers, Laser Cutters, and CNC Mills for student use.
- Organized various shop tools to streamline student workflow and project completion.

### Oystilter
**Dec 2021 - Jan 2024**

***Founder***

- Engineered custom submersible device that is capable of removing over 50% of phosphorus and nitrogen in natural waterways.
- Devised a unique filtration method that is capable of filtering flowing water without electricity.

## Additional Work Experience

### Valence Robotics
**Sep 2023 - Present**

***Mentor***

### Kumon Learning
**May 2019 - Jan 2023**

***Tutor***

### CodefyCS
**Dec 2020 - Jan 2024**

***Executive Director***