

# PRANJAL SINHA

20800 Homestead Road, Cupertino, CA 95014 | (510) 386-4738 | [pranjal5@illinois.edu](mailto:pranjal5@illinois.edu)  
[www.linkedin.com/in/pranjalsinha5/](https://www.linkedin.com/in/pranjalsinha5/)

## EDUCATION

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**University of Illinois at Urbana-Champaign** | Grainger College of Engineering  
Bachelor of Science, Mechanical Engineering  
Minor in Computer Science

05/2021  
GPA: 3.91/4.00

**Comillas Pontifical University ICAI** | Engineering Exchange Program, Madrid, Spain

Spring 2019

## WORK EXPERIENCE

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**Energy Transport Research Laboratory (ETRL)** | *Undergraduate Research Assistant* Urbana, IL | 06/2019 - Present

- Researched the behavior of microdroplets on superhydrophobic surfaces for Professor Nenad Miljkovic
- Manipulated the voltage, droplet diameter, and number of droplets to obtain a trend in droplet liftoff
- Compiled data using MATLAB to find the acceleration and trajectory of the droplets, obtained accelerations as high as approximately 50 meters/second under a 5 Kilovolt voltage

## PROJECT EXPERIENCE

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**Drag Reduction System (DRS), Illini Formula Electric**

Fall 2018

- Implemented a competitive DRS to decrease in drag by 15 lbs, increasing lap time by 0.2 seconds
- Utilized the CNC milling machine to fabricate the rear wing element molds for carbon fiber inserts
- Led a team of 3 students during carbon fiber setups, produced a rear wing element of only 0.4 lbs

**S'mores Machine, Society for Engineering Mechanics**

Fall 2017 - Spring 2018

- Designed a Marshmallow Dispenser, enabling the quick turnover of marshmallows
- Used Arduino to control the servo motors, allowing the machine to operate independently once in use
- Refined the design of the S'mores Machine to reduce weight and improve visual appearance

**Truss Construction, Theoretical and Applied Mechanics 195**

Fall 2017

- Created engineering drawings for the truss, portrayed exact dimensions and tolerances allowing for rapid construction
- Competed with 20 other teams for the strongest truss, placed 6<sup>th</sup> with an end result of 2100 pounds of force withstood
- Collaborated with 3 students to document our design strengths and flaws for future student access

## LEADERSHIP AND ACTIVITIES

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**Illini Formula Electric** | *Suspension and Aerodynamics*

Champaign, IL | 01/2018 - Present

- Worked with the Testing and Tuning subsystems to determine a properly balanced damping setting for smooth suspension
- Participated in a group of 4 students to design and model the linkages of the DRS using SolidWorks
- Presented the team's ideas, to receive feedback on designs and improve integration with other subsystems

**Society for Engineering Mechanics** | *Social Chair*

Champaign, IL | 08/2017 - Present

- Coordinate social events for members and joint engineering organizations to promote comradery between students
- Participated in Engineering Open House as a representative of the organization to recruit new members
- Instructed new members on how to use Autodesk Inventor to design various parts for the specific projects

**Pi Tau Sigma, Alpha Chapter** | *Alumni Relations Chair*

Champaign, IL | 08/2018 - Present

- Invited to join PTS based on 3.5 GPA or higher during Fall 2018 semester
- Responsible for connecting with alumni and inviting them to share their work with current students
- Raised money at a fundraising barbecue for the Brother's Brother Foundation to benefit the victims of recent hurricanes

## SKILLS

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**Software:** PTC Creo Parametric, Autodesk Inventor, SolidWorks, Java, Python, MATLAB, Adobe InDesign, Microsoft Office, Ansys, HTML, CSS

**Languages:** English (Native), Hindi (Conversational), French (Fluent), Spanish (Beginner)

**Fabrication:** 3D Printing, Laser Cutting, Soldering, Machining, Composites Manufacturing, GD&T, DFMA