PRANJAL SINHA

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EDUCATION

University of Illinois at Urbana-Champaign | Grainger College of Engineering *May 2021*
Bachelor of Science, Mechanical Engineering *GPA: 3.91/4.00*
Minor in Computer Science

Comillas Pontifical University ICAI | Engineering Exchange Program, Madrid, Spain *Spring 2019*

Relevant Coursework: Statics, Introductory Solid Mechanics, Introductory Dynamics, Thermodynamics, Engineering Materials, Electric and Electronic Circuits, Design for Manufacturability, Mechanical Design I, Fluid Dynamics

WORK EXPERIENCE

Energy Transport Research Laboratory (ETRL) | *Undergraduate Research Assistant* *Urbana, IL | June 2019 – Present*

- Researched behavior of microdroplets on superhydrophic surfaces for potential implications of phase change heat transfer
- Manipulated voltage, droplet diameter, and number of droplets to obtain a trend in droplet liftoff
- Compiled data using MATLAB to find acceleration and trajectory of droplets, obtained accelerations as high as approximately 50 m/s^2 under a 5 kV voltage

PROJECT HIGHLIGHTS

Aerodynamics Package (Rear Wing), Illini Formula Electric *Champaign, IL | Fall 2018*

- Implemented a competitive rear wing to decrease in drag by 15 lbs, increasing lap time by 0.2 seconds
- Fabricated rear wing element molds for carbon fiber inserts using CNC milling machine
- Instructed a team of 3 students during carbon fiber setups in autoclave, produced a rear wing element of only 0.4 lbs
- Presented team's ideas to receive feedback on designs and improve integration with other subsystems

S'mores Machine, Society of Engineering Mechanics *Champaign, IL | Fall 2017 – Spring 2018*

- Designed a Marshmallow Dispenser, enabling quick turnover of marshmallows
- Deployed Arduino to control servo motors, allowing independent operation once in use
- Refined design of S'mores Machine to reduce weight and improve visual appearance
- Served over 600 S'mores to students and children during Engineering Open House

Ergonomic Mouse Handle, Design for Manufacturability *Champaign, IL | Fall 2018*

- Constructed a PDS and QFD Matrix to delineate major points regarding design/development of product
- Utilized rapid prototyping to fabricate various handle designs which were later tested in Design of Experiments (DOE)
- Calculated an increase in retail price by approximately $0.45 using aPriori, still undercutting competitor costs

LEADERSHIP

Society of Engineering Mechanics | *Social Chair* *Champaign, IL | August 2017 – Present*

- Coordinated social events for members and joint engineering organizations to promote comradery between students
- Created and overlooked a social committee to teach students how to plan and set up social events
- Participated in Engineering Open House as a representative of SEM to recruit new members
- Instructed new members on how to operate Autodesk Inventor to design various parts for specific projects

Pi Tau Sigma, Alpha Chapter | *Alumni Relations Chair* *Champaign, IL | August 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 work with current students
- Raised money at a fundraising barbecue for Brother's Brother Foundation to benefit victims of recent hurricanes

SKILLS

Software: PTC Creo Parametric, Autodesk Inventor, SolidWorks, aPriori, Adobe InDesign, Microsoft Office
Programming Languages: Java, Python (beginner), MATLAB, HTML, CSS
Languages: English (Native), Hindi (Conversational), French (Fluent), Spanish (Beginner)
Fabrication: 3D Printing, Laser Cutting, Soldering, Machining, Composites Manufacturing, GD&T, DFMA, DOE