JALAJ MAHESHWARI

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EXPERIENCE

CHILDREN'S HOSPITAL OF PHILADELPHIA *(Soft-money funded research center)* **Philadelphia, PA**
Project Lead Investigator **Oct 2019 – Present**

- Acquired $500k in project funding from the automotive industry by conceptualizing and designing projects, pitching to industry representatives, handling project finances, negotiating deliverables, and managing industry stakeholders
- Defined project KPIs, performed data analysis, generated actionable insights, and summarized data findings for 12 projects
- Supervised 4+ member teams of engineers, data analysts, and coordinators on projects focusing on vehicle occupant safety and injury prevention over 5 years resulting in 37 conference presentations and publications

Project Engineer **May 2016 – Oct 2019**

- Directed 3 usability studies with 40+ participants to guide feature and product development in vehicles and child seats
- Performed qualitative and quantitative data analysis of volunteer behavior and metric data using Python and MATLAB
- Reduced man-hours by 98% and increased team productivity by automating data extraction from software via Python scripts
- Decreased computation times by 30% and project costs by 17%, thereby increasing efficiency by integrating HPC resources

UNIVERSITY OF PENNSYLVANIA *(PRECISE research center)* **Philadelphia, PA**
Research Assistant - Robotics **Sept 2017 – May 2018**

- Developed F1Tenth, an open-source $^{1}/_{10}^{th}$ size autonomous racecar hardware and software platform used by universities across the world, resulting in 34 racecar builds with improved autonomous vehicle algorithms and 15% faster racetrack lap times
- Optimized the algorithm and racecar design through iterative testing using ROS, C++, Python, and mechanical upgrades
- Co-hosted the F1Tenth competition involving 8 international autonomous vehicle research teams at Cyber-Physical Systems Week 2018 held in Porto, Portugal with ~1000 attendees

FORD MOTOR COMPANY *(Product development research and innovation division)* **Dearborn, MI**
Product Development Intern **Jun 2017 – Sept 2017**

- Headed technical development of a computational model for a child seat using scanned CAD data and finite element software to be used in Ford's US & European vehicle assessment protocols, and delivered in an aggressive 2-month deadline
- Collaborated with cross-functional teams across research, product development, and product testing departments
- Validated the model with <10% error in kinematic data from a pediatric crash test dummy in frontal vehicle crashes

PROJECTS

XTEND (*Kitchen countertop extension product for students)* **Dec 2020 – Present**

- Identified a customer segment need, conducted 5 customer interviews and market research, and user-testing
- Manufactured an MVP under $50 cost constraints resulting in $106k estimated profits on sales

CROCKPOT REDESIGN ***(****Slow cooker design improvement)* **Jan 2017 – Apr 2017**

- Conducted market research, cost-worth analysis, design for manufacturing and assembly (DFMA), and target costing
- Increased design efficiency by 3% resulting in an estimated increase in sales by 250k units per year

LEADERSHIP AND COMMUNITY ENGAGEMENT

- **Social Media Chair, MEGA@UPenn**: Organized weekly networking coffee hours for 250+ graduate students and faculty
- **Advisor, CHOP-RISES**: Introduced 14 K-12 students from local under-resourced schools to STEM careers and research
- **Mentor, NSF REU Program**: Mentored 5 undergraduate students over 4 years from research limited institutions with their STEM career path by engaging them in active research for 10 weeks
- **Foster, PAWS**: Volunteered with the Philadelphia Animal Welfare Society to help animals in need of urgent foster

EDUCATION

UNIVERSITY OF PENNSYLVANIA **Philadelphia, PA**
Master of Science in Engineering (MSE): *Major in Mechanical Engineering and Applied Mechanics* **Aug 2015 – May 2017**

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCES (BITS-PILANI) **Goa, India**
Bachelor of Engineering Honors (BE Hons.): *Major in Mechanical Engineering* **Aug 2011 – Jul 2015**

ADDITIONAL INFORMATION

Skills: Python, C, C++, MATLAB, SQL, OpenCV, Tensorflow, Pytorch, Arduino, Prototyping, DFMA, JIRA, Agile, Scrum
Recognition:

- AAAM Travel Award 2019 recipient: Awarded to 5 of 60 conference presentations at the Association for the Advancement of Automotive Medicine Annual Conference held in Madrid, Spain
- Featured in a Consumer Reports article on occupant safety