JALAJ MAHESHWARI

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EXPERIENCE

CHILDREN'S HOSPITAL OF PHILADELPHIA — **Philadelphia, PA**
Research Project Engineer and Project Lead — **2016 – Present**

- Successfully led project fundraising efforts, raising $385K from key stakeholders from the automotive industry by designing and pitching projects, negotiating deliverables, and stakeholder management
- Led 3-5 member teams on 12 projects focusing on vehicle occupant safety and injury prevention over four years resulting in 24 conference presentations and publications
- Led three usability studies with more than 40 participants to guide feature and product development in vehicles and child seats
- Performed qualitative and quantitative analysis of volunteer behavior and metric data using Python and MATLAB scripts
- Reduced man-hours by 98% and increased team productivity by automating kinematic data extraction from computational simulations via Python scripts
- Decreased simulation times by 30%, thereby increasing efficiency by integrating high-performance computing resources

UNIVERSITY OF PENNSYLVANIA — **Philadelphia, PA**
Research Assistant - Robotics — **2017 – 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

THE FORD MOTOR COMPANY — **Dearborn, MI**
Product Development Intern — **Summer 2017**

- Spearheaded technical development of a fully functional computational model for a child seat using scanned CAD data and finite element software to be used in Ford's US & European vehicle development and assessment protocols
- Collaborated with cross-functional teams across research, product development, and product testing departments
- Successfully validated the model with <10% error in kinematic and kinetic injury metrics from a pediatric crash test dummy in frontal vehicle crashes

PROJECTS

- **Maia AI (2020):** Developed an MVP capable of detecting and alerting vehicle occupants to prevent serious injuries in motor vehicle-related incidents; Currently assessing product-market fit and conducting customer discovery via the Wharton Venture Initiation Program (Wharton-VIP)

- **Smart Child Seat App (2019):** Developed a value proposition and led customer discovery on 25 people from three market segments for a potential child seat mobile app that assists parents and caregivers in choosing age-accurate child seats and prevents their improper usage through the Penn Innovation Corps (Penn I-Corps) program

- **XTend (2017):** Identified a student target customer segment need, conducted customer interviews, market research, and manufactured a kitchen countertop extension product under $50 cost constraints with $106k estimated profits on sales

- **Crockpot Redesign (2017):** Redesigned a market available slow cooker, conducted market research, cost-worth analysis, DFMA, and target costing resulting in a 3% increase in design efficiency and potential increase in sales by 250k units per year

- **ADANI Power, India (2013)**: Increased conveyor belt life of coal handling unit by 167% by identifying the cause of mechanical failure and improving splicing procedure

EDUCATION

UNIVERSITY OF PENNSYLVANIA — **Philadelphia, PA**
Master of Science in Engineering; *Major in Mechanical Engineering and Applied Mechanics* — **2015 – 2017**

BIRLA INSTITUTE OF TECHNOLOGY AND SCIENCES (BITS-PILANI) — **Goa, India**
Bachelor of Engineering (Hons); *Major in Mechanical Engineering* — **2011 – 2015**

ADDITIONAL INFORMATION

Skills: Python, C, C++, MATLAB, OpenCV, Tensorflow, Pytorch, Keras, ROS, Arduino, Laser Cutting, 3D Printing, DFMA
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