

JALAJ MAHESHWARI

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PROFESSIONAL EXPERIENCE

Project Lead and Project Engineer, Children's Hospital of Philadelphia, Philadelphia, PA 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 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 data extraction from simulations via Python scripts
- Decreased simulation times by 30%, thereby increasing efficiency by integrating high-performance computing resources

Research Assistant – Robotics, University of Pennsylvania, Philadelphia, PA 2017 – 2018

- Developed F1Tenth, an open-source $1/10^{\text{th}}$ 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

Product Development Intern, Ford Motor Company, Dearborn, MI Summer 2017

- Spearheaded 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 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 data from a pediatric crash test dummy in frontal vehicle crashes

PROJECTS

Maia AI (2020): Leading development of a mobile app which warns distracted and fatigued drivers, and rewards safe drivers

- Defined the problem, product vision, conducted market analysis, and identified initial target market by conducting customer discovery through 15 user interviews and 6 surveys with 150+ respondents per survey
- Assessing product-market fit, building an MVP, and user testing via the Wharton Venture Initiation Program (Wharton-VIP)

Child Seat App (2019): Led customer discovery for a mobile app that assists parents/caregivers in choosing age-accurate child seats and prevents their improper usage

- Developed a value proposition and conducted customer discovery through 25 customer interviews over three market segments through the Penn Innovation Corps (Penn I-Corps) program

XTend (2017): Manufactured a kitchen countertop extension product for students

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

Crockpot Redesign (2017): Redesigned and improved 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 efficiency of the Coal Handling Unit of the power plant

- Increased conveyor belt life by 167% by identifying the cause of mechanical failure and improving splicing procedure

EDUCATION

University of Pennsylvania, Philadelphia, PA

Master of Science in Engineering (MSE): *Major in Mechanical Engineering and Applied Mechanics*

2015 – 2017

Birla Institute of Technology and Sciences (BITS-PILANI), Goa, India

Bachelor of Engineering Honors (BE Hons.): *Major in Mechanical Engineering*

2011 – 2015

ADDITIONAL INFORMATION

Skills: Python, C, C++, MATLAB, SQL, 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
- Featured in a Consumer Reports article on occupant safety: <https://www.consumerreports.org/car-safety/making-car-back-seats-safer/>