Jaideep Singh Chavan

Website : jaideepsingh08.github.io

Email : jchavan@mtu.edu
Mobile : 231 - 886 - 5999

Summary

Seeking challenging opportunities in Product Design and Hardware Product Development. Graduating in May - 2019.

Education

- **Michigan Technological University** — Michigan
  Master of Science in Mechanical Engineering; GPA: 3.77 — *Jan 2018 – May 2019*
- **Birla Institute of Technology and Science, Pilani** — India
  Dual Major: MSc. Physics + BE. Mechanical Eng; Major GPA: 8.65/10.0 — *Aug 2010 – Jul 2015*

Professional & Technical Skills

- Matlab, Simulink
- Inventor, Solidworks, NX
- ANSYS, Abaqus, ANSA
- C/C++, Python
- DFMA, GD&T Y14.5
- Hardware Integration
- Testing & Validation
- Prototyping

Experience

- **Bumblebee Spaces** — San Francisco, CA
  Hardware Product Development Engineer, Co-Op — *Jan 2019 - May 2019*
  - Leading Concept-Production development of Electromechanical & Robotic systems to create intelligent living spaces.
- **Engineering Learning Center, Michigan Tech** — Houghton, MI
  Graduate Teaching Assistant - ELC, MEEM — *Sep 2018 - Dec 2018*
  - GTA at the ELC teaching Statics, Dynamics, & Mechanics of Materials to 900+ students in Mechanical Engineering.
- **GreyOrange Robotics** — Gurgaon, India
  Mechanical Design & Integration Engineer, R&D — *Nov 2015 - Dec 2017*
  - Collaborated with six multi-disciplinary teams to lead ***design & integration of three versions*** of autonomous Goods-to-Person robots, from ***concept-to-production:*** Architecture, Design, Production, Validation & Certification.
  - Designed, Integrated & Released ***over 70%*** of all electro-mechanical systems (400+ Drawings) using several manufacturing processes: Chassis & Load Structures, Powertrains, Gearboxes, Electronics Enclosures, HIL Test Setups.
  - Responsible for ***sensor selection, architecture and integration*** of all electromechanical and hardware systems (Lidar, Camera, ODS, Proximity, IR, safety edge, IMU, Powertrains, Battery Systems, Enclosures, Harness etc)
  - Generated Control Strategies, performed ***analysis & mathematical modeling*** of all systems of the BUTLER robot.
  - Supported production build events, conducted cross-functional design reviews and Root Cause Analyses. ***Influenced design decisions*** to improve manufacturability, assembly, serviceability, and reliability.
  - ***Worked with 30+ suppliers***, communicated requirements, supported supplier development, and evaluation.
  - Led work on ***system reliability testing*** and successfully obtained ***CE certification***. Led validation tests such as ALT, HALT, EMI/EMC (ISO 7637-2), Environmental tests (IEC 60068-2-1A/2B/30/64) in collaboration with ARAI.
  - Undertook mentorship and growth responsibility of two full-time employees and four graduate interns in the team.
- **Fiat Chrysler Asia-Pacific Technology Center** — Pune, India
  CAE Engineer - Intern, R&D — *Jul 2014 - Dec 2014*
  - ***Developed analytical models*** to accurately predict Minimum Door Closing Velocity for automotive swing doors.
  - Validated results from CAE simulations. Improved simulation computation time by ***40%*** & accuracy by ***12%.***

Academic Projects

- **HEV Modeling & Testing:** Designed Series/Parallel HEVs in Simulink to perform tests using standard Drive Cycles.
  - Devised ***Control Strategies*** for Torque Blending and Regenerative Braking in various operating modes of an ***HEV.***
- **Li-Ion Battery Modeling:** Designed a BEV model in Simulink to perform Energy Consumption tests as per ***SAE J1634.***
  - Developed an ***equivalent circuit model*** in simulink, to analyze aging mechanisms, capacity fade & range reduction.
- **Li-Ion Battery Design:** Designed a Li Nickel Manganese Cobalt Oxide electrode to meet ***DoE FreedomCAR needs.***
  - Built ***battery models in Simulink*** to observe hybrid pulse power test capability (HPPC), aging and fade.
  - Estimated the ***effect of aging*** on internal resistance, cell capacity, and available discharge energy of the battery pack.
- **Modular Vehicle Design:** Developed & Presented a novel approach for ***extensive modularization of an automobile*** using efficient modular design practices. Estimated gains & effects on weight, strength, fuel economy and performance.
- **SAE India Projects:** Led a team of 25 to design and build ***three university SAE collegiate competition vehicles*** as the Head of Design and Team Captain for: SAE India BAJA '15, SAE efficycle '13, and National Karting Championship '13.
  - Led Integration, Designed Chassis, Suspension & Steering Systems, evaluated Structural and Dynamic performance.

Publications

- Paper Publication at ***2016 SAE World Congress and Exhibition,*** SAE International (16M-0028/2016-01-0434). Roshan N, Jaideep S., **Evaluation of Minimum Door Closing Velocity Using Analytical Approach.**

Honors & Achievements

- Recipient of the prestigious ***J. N. Tata scholarship***, awarded $21,500 for pursuing Masters' in Mechanical Engineering.
- Rated as a ***"Champion"***, the highest rating, in all performance appraisal reviews at GreyOrange India.
- Presented with ***"The Rising Star"*** award by the CEO of GreyOrange, for remarkable contribution to the organization.
- Awardee of the renowned ***INSPIRE Scholarship***, received $8500 from Dept. of Science & Technology, Govt. of India.
- Won ***"Certificate of Excellence"*** & over $6500 in cumulative awards for designing, fabricating, racing & winning against 250+ teams in RC prototype Race Car competitions at: IIT-Bombay, IIT-Kanpur, IIT-Kharagpur, and BITS-Pilani & more.