Jaideep Singh Chavan

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Experience

- **Bumblebee Spaces** — San Francisco, CA
  Staff Hardware Engineer & Product Architect — *Jan 2019 - Present*
  A home robotics company, designing efficient living spaces using robotics & AI. Funded by Toyota AI Ventures, NTT VC & more.
  - Leading Concept-Production development of Electromechanical systems to create intelligent living spaces
  - Designed the ceiling module from alpha to E/DVT release including adjustable install system, chassis, drivetrain & gearboxes, electromechanical mechanisms, self-deploying passive furniture feet, motor dyno, jigs & fixtures
  - Minimized ceiling stack thickness (50%), Reduced install time(85%), Reduced Noise reduction(70%), Drove down Module MBOM cost (60%) and significant Safety, Durability, DFM/A/S improvements
  - Led product reliability, conducted system level FMEA, wrote verification and validation plans for EVT 1,2/DVT builds to test function, durability and interactions including cycle testing, over-stress, abuse, material and environmental testing

  Leadership & NPI
  - Co-managed the Hardware team, built design processes, conducted technical reviews, maintained AutoDesk Vault PLM & change management, final sign-off for manufacturing release
  - Led engagement and selection of CMs & suppliers to accelerate and scale design to DVT/PVT/MP, outlined project requirements and scope of work, engineering services to leverage DFM/S and pre-certification test infrastructure
  - Translated product requirements into technical specifications, managed project scope to deploy new features into builds. Built project plan to split project scope into smaller milestones for the team to achieve successful completion
  - Provided on-site support during builds for international CMs and suppliers in China, India, UK and US. Audited and approved build processes, SOPs and production batch inspection and test reports
  - Assisted the founders in pitching the product, future road-map to investors and strategic customers

- **GreyOrange Robotics** — Gurgaon, India
  Mechanical Design & Integration Engineer, R&D — *Nov 2015 - Jan 2018*
  India's largest hardware startup, building robotic systems to automate warehouses. Funded by Tiger Global, Mithril Capital & more
  - Collaborated with multi-disciplinary teams to lead design and release 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 Electromechanical systems using several materials & manufacturing processes: Chassis & Load Structures, Powertrains, Gearboxes, Harness & Enclosures, Test Setups
  - Defined sensor selection, architecture and integration of all electromechanical and hardware systems (Lidar, Camera, Depth, ODS, Proximity, IR, safety, IMU, Powertrains, Battery Systems, Enclosures, Harness etc)
  - Generated Control Strategies, performed analysis & mathematical modeling of all systems of the BUTLER robot
  - Engineered 3D CAD, validated and iterated designs using FEA, built & tested prototypes. Applied standard practices including Design for Manufacturing and Assembly (DFMA), tolerance analysis, and ASME Y14.5 GD&T principles
  - 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

- **Fiat India Automobiles Pvt Ltd** — Pune, India
  Manufacturing Technology - GET — *Jun 2014 - Oct 2015*
  - Performed process control & kaizen assignments in Engine, Transmission, BIW, Paint shop and Car Assembly lines.
  - Worked on production line design & installation for Jeep Compass & relocating Fiat Punto Body-in-White (BIW) plant.

  CAE Engineer Intern, Durability
  - Developed analytical models to accurately predict Minimum Door Closing Velocity for all FCA swing doors.
  - Validated & published results in SAE World Congress. Improved computation time by 40% & accuracy by 12%.

Honors & Achievements

- Recipient of the prestigious J. N. Tata scholarship (selection rate 0.1%), for pursuing Masters' in Mechanical Engineering.
- Presented with "The Rising Star" award by the CEO of GreyOrange, for remarkable contribution to the organization.
- Led the university SAE teams in three competitions as Head of Design including SAE BAJA, placed 11th/320+ in Engineering
- Awardee of the renowned INSPIRE Scholarship (selection rate 0.02%) from Dept. of Science & Technology, Govt. of India.
- Received university Merit Scholarship from BITS Pilani, for five successive years.
- Won "Certificate of Excellence" for winning competitions against 250+ teams at IIT-Bombay,Kanpur,Kharagpur, BITS-Pilani

Professional & Technical Skills

- Matlab, Simulink
- Inventor, Solidworks, NX
- ANSYS, Abaqus, ANSA
- C/C++, Python
- DFM/A/S, GD&T Y14.5
- Windchill, Autodesk Vault
- Testing & Certification
- Jira/Confluence/Asana

Education

- **Michigan Technological University** — Michigan
  Master of Science in Mechanical Engineering; GPA: 3.8
- **Birla Institute of Technology and Science, Pilani** — India
  Dual Major: MSc. Physics + BE. Mechanical Eng; Major GPA: 8.65/10.0