

Vipul Gadekar

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Research-oriented graduate engineer with a background in mechanical design, modeling and simulation interested in utilizing varied applications of engineering techniques to generate innovative solutions.

EDUCATION:

M.S in Aerospace Engineering –

Arizona State University, Tempe, USA

GPA: 3.43/4.00

(2018 - 2020)

B.E in Mechanical Engineering –

Y.C.C.E, Nagpur University, India

CGPA: 7.09/10

(2013-2017)

TECHNICAL SKILLS:

Design and Simulation: PTC Creo, SOLIDWORKS, Catia, ANSYS, MATLAB, NX-Cam

Programming: MATLAB, Python (Jupyter)

Other: Microsoft Excel, PowerPoint, Word, Project

Certification: CFD- ANSYS (ICEM, FLUENT), Barclays LifeSkills Training (license 50978)

EXPERIENCE:

Grader – Foldable Robotics (MAE 598) – The Polytechnic School, ASU, Mesa

(January 2019 – May 2019)

- Evaluation of assignments dealing with bio-mechanics, 2D/3D CAD modelling, Python based dynamics simulation model, FEA stiffness analysis of materials and laminate manufacturing.

Teaching Assistant – Engineering Design (MEE 488) – SEMTE, ASU, Tempe

(January 2019 - present)

- Evaluation and review of senior-term design project reports throughout the semester.

Project Intern - R&DE(E), DRDO , Pune, India

(June 2017 - December 2017)

- Synthesized the configuration design, structures and aero propulsion of multi-domain quadcopter drone under guidance of Scientist level 'D' at Defense Research and Development Organization, R&DE Lab .
- Undertook the research on different configurations of system layout with design and analysis of drone frame for structural rigidity on CREO and ANSYS.
- Optimized system parameters to maximize performance, endurance with selective application of composite materials, iterative design reviews and electronics package evaluation.

CAD Engineer Intern - AMFW Ltd. Nagpur, India

(February 2016 - March 2016)

- Worked as an intern on CAD modeling and production drawings of parts for CNC manufacturing. The designs were manufactured for assembly on farming machinery and equipment.
- Designed 2D as well 3D designs on CREO platform with strict industry formatting, tolerance rules with DFM protocols and Kaizen for use on fabrication floors by machine operators and quality department.

PROJECTS:

• **Design of Aircraft Wing:** A.S.U, Tempe : (Fall 2018)

MAE 564 Advanced Aerodynamics. Involved iterative design process optimizing sweep angle, twist, camber and dimensions of a transonic wing for transport aircraft using VORLAX code and MATLAB.

• **Calibration and Experimentation on Wind Tunnel:** Y.C.C.E, Nagpur : (Spring – Fall 2017)

Senior design project. Involved calibration of existing open-circuit, subsonic wind tunnel and undertook design of experiments on various sections to understand fluid physics and various flow-visualization methods. The project involved technical presentations and external evaluation for completion of degree.

• **DynaRoof:** Mumbai : (January 2017)

Presented the innovative solution for a dynamic, autonomous daylight roof system at TechGium 2016 engineering competition conducted by L&T Tech Services India national semi-finals. The innovative solution involved real-time measurement of incident sun-light intensity and processing of data to open modular roof tiles to illuminate interior spaces of structures with an aim to reduce energy usage and implement under green building technologies.

CFD - Project Based Summer School & Software Training Program. (May 26 to June 9, 2017)

Attended summer school course on Computational Fluid Dynamics using ANSYS ICEM and Fluent at Visvesvaraya National Institute of Technology, Nagpur. The course involved study of governing equations and operation of CFD geometry meshing techniques, mesh blocking, pre-processing and post-processing in thermal and fluid application cases.

ORGANIZATIONS:

Team co-ordinator: SAE India BAJA (2017) ; Formula Student India (2015)

for Team Acira- college team participating in national engineering design competition involving design, fabrication and racing of vehicle platforms. Worked on design presentations, fabrication and assembly of brake systems and vehicle testing. Undertook PFMEA, DFMEA for design priorities and fail-safes and DVP during vehicle testing. Developed aerodynamics performance concept for FSI-2015 vehicle.

Team Captain: National Kart Racing Championship; International Series of Karting (2015, 2016, 2017)

Established our college team Racecraft, participating in national engineering design competitions involving design, fabrication and racing of go-karts. Worked extensively on design and development of tube-frame chassis using vehicle dynamics, jacking effect principles on CREO platform. Year on year improvements in vehicle kerb weight, design optimization of components and vehicle handling. Team captain for 2 years, leading a total of 40 members to plan, participate and execute the engineering project to strict deadlines.

Co-Organizer: TEDX Nagpur - Nagpur, India (2015-2016)

Organizing member of TEDX Nagpur, the license holder for TED Global events for Nagpur city. Successfully conducted three large TEDX talk events with total footfall of about 500 people. Duties included leading volunteers to various duties, design of graphics, handling of vendors and various parties for successful execution.