

# VINAY VALLERU

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A recent Graduate student with 3+ years of experience in CFD and FEA in academic and industrial setting, with fine knowledge in Aerodynamics, Propulsion system design, and CAD with very good attention to details. With extensive teaching and adept working experience across multiple Engineering fields and being adaptable, versatile, strong team player with inherited good problem-solving skills, I believe my skills can be put to a great use at your prestigious company.

## EDUCATION

**MS in Aerospace Engineering** | University of Kansas | Lawrence, KS Dec 2018  
**Bachelor of Technology in Mechanical Engineering** | SASTRA University | Tamil Nadu, India May 2014

## TECHNICAL SKILLS

**Proficient:** CFD | Star CCM+ | Fluent | CFD++ | Catia | MATLAB | Siemens NX | ADAMS/View | MS Office |  
**Familiar:** SolidWorks | Pro/E | Ansys WorkBench | LaTeX | C | C++ | Photoshop |

## ACADEMIC RESEARCH & PROJECTS

### **MS THESIS: Aeroacoustic Analysis of a wind turbine with sinusoidal leading edge**

- Evaluated aeroacoustic performance of a wind turbine with sinusoidal leading edge blade.
- Flow is solved using two equation Steady RANS SST K-Omega Turbulent model & Broadband noise is evaluated using Curle noise source model.
- Succeeded in improving the power output by up to 12% at higher wind speeds while reducing the noise output at higher wind speeds by modifying the leading edge.

### **In-Class Projects:**

- Design and modeling of a turbofan and a rocket engine using Siemens NX.
- Particle tracking (PIV) using Image Processing on MATLAB.
- Flow analysis over a bluff body, NACA Airfoil using ANSYS Fluent.

### **Bachelor's project: FEM Analysis of a Scissor Jack**

- Numerical analysis is performed to observe the stress levels in the scissor Jack.
- Scissor jack was modeled in Catia and numerical calculations are performed in Ansys Workbench.
- Stress at various levels are compared with Tensile and Yield strength, and critical zones on the scissor jack are determined using FEM.
- Analysis helped determine, Factor of safety, Total and directional deformation, and von mises stress among other key factors which help in improving the design of the product.

## WORK EXPERIENCE

### **Teaching Assistant & Tutor | University of Kansas**

Aug '15-May '17

- Worked along with professor in grading and preparing practice problems and provided reciting and tutoring sessions.
- Topics covered includes Electrostatics, Magnetism, Induction, Electromagnetic waves, Atomic and Nuclear Physics.
- Provided guidance, performed practice and problem-solving sessions for undergrad students in Advancing courses.

### **Engineer Trainee | Aeronautical Development Agency, India**

July'14-June'15

- Worked along with CFD engineer in modeling and simulating Aircraft model (LCA-Tejas).
- Performed CFD analysis on the air intake and engine performance of the aircraft using CFD++.
- Flow properties like Boundary layer, Shocks are observed at different aircraft speeds.

### **Industrial Trainee | Shanmuga Precision Forging, India**

June'13-May'14

- Trained in the design process of precision metal parts, CNC programming, shop floor control, supply chain management & MRP.
- Hands-on experience in Metrologic work with machines such as CMM, Universal length measurement, contour racer, surface roughness tester and profile projector.