

# Vamsi Krishna Kodati

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## Summary

Dedicated Aerospace Engineer with expertise in vibrations, dynamics, control systems, and fluid dynamics. Proficient in analytical techniques, digital control, and computational fluid dynamics. Skilled in mechatronics, Six Sigma, and operations research. Knowledgeable in smart structures and modal analysis techniques. Completed Six Sigma course for process optimization and quality improvement. Familiar with sustainable manufacturing practices and adept at using AutoCAD and statistical analysis tools. Eager to contribute formal education and technical skills to innovative engineering projects. Ready to take on a challenging aerospace engineering role and make significant contributions to the field.

## Education

- Aerospace Engineering (University at Buffalo, USA, 2022-2023)
- Aeronautical Engineering (Guru Nanak Institutions Technical Campus, India, 2013-2017)

## Skills

- |                |                         |                             |
|----------------|-------------------------|-----------------------------|
| • AutoCAD      | • MATLAB                | • Programmable Logic        |
| • SolidWorks   | • Computer Numerical    | Controller (PLC)            |
| • Creo         | Control (CNC)           | • Simulink                  |
| • GCP          | • Team Leadership       | • Statistical Analysis      |
| • Minitab      | • Communication Skills  | • Microsoft Office          |
| • Adaptability | • Time Management       | • Ability to Multitask      |
|                | • Ability to work under | • Ability to work in a team |
|                | pressure                |                             |
|                | • Data Analysis         |                             |

## Projects (Graduate)

### Workshop on Physics of Robots (University at Buffalo)

In the workshop, I designed a Complaint Mechanism plyer using AutoCAD and 3D design software. I performed force and displacement calculations. With a team of 2, we selected a 26:1 planetary gear motor and conducted lab tests, measuring voltage, current, torque, and speed. We plotted torque vs speed & current, torque vs power, and torque vs power efficiency. In the final workshop, I analyzed a Jumping robot's motion, tracked its kinematics, and calculated its center of mass using high-speed motion camera data. I determined take-off velocity, acceleration, and calculated errors using slow-motion video and regression analysis.

### **Advanced Study in theory of small Vibrations (University at Buffalo)**

Studying small vibrations taught me that when an object vibrates, it sets air molecules in motion. These molecules, influenced by neighboring ones, collide with additional air molecules nearby. Consequently, equipment or structures exposed to small vibrations may experience damage, disruptions, or even catastrophic failures. To prevent such issues, measuring vibrations is crucial.

### **Game Design using Simulink in Mechatronics (University at Buffalo)**

In this mechatronics project, I integrated electrical systems into mechanical applications proficiently. Used multimeter, impedance, and mechanisms for smooth functioning. Knowledge of diode functions, diverse transistors (FET, MOSFET, JFET, BJT, NPN & PNP) optimized performance. Employed Boolean algebra, logic gates, binary coded decimals, and transistors & gates for efficient operations. Designed sequential circuits & logics for responsive systems. Developed Simulink-based rock, paper, scissors game with Boolean logic and GUI components. Interactive two-player game with even/odd calls and number reveals showcased innovation. Demonstrated versatility and expertise in mechatronics, combining logical decision-making and user interfaces.

## **Undergraduate Projects and Extra circular activities**

### **Aeolus-2014 (Guru Nanak Institutions Technical Campus, India)**

Designed and fabricated a remote-controlled aircraft using cardboard material to optimize weight and enhance overall performance.

### **National Interdisciplinary Workshop on Design and Development of Ornithopter (Tamkang University and Engineering Staff College of India)**

Developed an Ornithopter with a gear mechanism, gaining a comprehensive understanding of its functioning and mechanics.

### **National Videography Club (Guru Nanak Institutions Technical Campus, India)**

In 2014, volunteered for the National Short Film Festival, and in 2015, took on the role of organizer. The festival showcased short films from across India, engaging the audience in selecting the winners through opinion polling after the film screenings.

### **Organized a Guinness Record (Managers Without Borders, India)**

On March 17th, 2016, a remarkable feat was accomplished by setting a new world record for the "Longest Mobile Phone Chain." A total of 3,766 mobile phones were ingeniously connected, forming an impressive chain that extended over 481 meters, securing the prestigious title.

### **National conferences on Innovations in Aeronautical Engineering, India**

## **Languages**

- English (High Proficient)
- Hindi (High Proficient)
- Telugu (Native Speaker)