

Pranath Kumar Gourishetty

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RESEARCH INTERESTS

- Meta-materials
- Smart Materials
- Multi-stable structures
- Multiphysics System Modelling
- Dynamic Systems
- Stochastic Processes and Complex Systems
- Linear and Nonlinear Control Theory
- Linear and Nonlinear Mechanics

EDUCATION

Sapienza University of Rome

Master of Science, Space and Astronautical Engineering

Rome, Italy

Sep. 2016 – present

Courses:

- Additive Manufacturing and Production Systems
- Aerospace Structures
- Control Systems
- Nonlinear analysis of Structures
- Experimental Testing of Aerospace Structures
- Experimental Aerodynamics
- Spacecraft Design
- Space Robotics
- Robust Control
- Space Missions and Systems
- Compressible Flows
- Spaceflight Mechanics
- Space Propulsion
- Environmental Impact of Aircraft Engines

Lovely Professional University

Bachelor of Technology, Mechanical Engineering (Minor: Mechatronics) - First Division

Phagwara, India

Aug. 2011 – Aug. 2015

RESEARCH EXPERIENCE

Altran Italia , Sapienza University of Rome

Advisors: Walter Lacarbonara, Giuseppe Quaranta, Giovanni Pesare

Rome, Italy

Mar.2020 – August 2020

Developed Machine learning based methodologies for production cost optimization of an aircraft engine's low pressure turbine casing. Topology Optimization of scallops of the low pressure turbine casing has been performed for this purpose. Python based Machine learning frameworks are used for model training. Work involves use of commercial software for generation of data required for training the Machine Learning model and validation of results.

TEACHING EXPERIENCE

Sapienza University of Rome

Continuum Mechanics(M.Sc Nanotechnology Engineering), Teaching assistant

Rome, Italy

Sept.2019 – Jan. 2020

Assisted professor in writing problem sets and exams. Helped students individually with homework problems or material they found difficult to understand.

TECHNICAL SKILLS

- **Programming Languages:** Python, C/C++, Matlab (Simulink) , Mathematica.
- **Relevant Skills:** Embedded System Programming, Computer Aided Engineering, Computer Aided Design, Computer Aided Manufacturing, Cross Platform simulations of Physical Phenomenon, Mathematical Modelling.
- **Software:** AutoCAD, PTC Creo, Catia, Solidworks, Hypermesh, Comsol, Ansys Workbench, MSC Nastran, MSC Adams, Autodesk Maya, Altair Optistruct
- **Deep Learning Frameworks:** Tensorflow, Keras
- **Libraries:** NumPy, Matplotlib, Scipy, Scikit, Pandas, Hyperopt

CERTIFICATIONS

- **Coursera** Machine Learning - Andrew Ng July 2020

PROJECTS

A concept mission for the Stellar Population and Evolution with Cubesats Sep. 2017 – Jan. 2018

Design and assembly of the structural components for the Cubesat is performed using CATIA V5. Engineered mechanisms that can facilitate change of filters in real time for the payload to capture varied spectrum of the stars. Static and dynamic analysis of the structure is carried out using ANSYS workbench.

Design and Fabrication of control system for an Abrasive Jet machine Jan. 2015 – June 2015

Designed and Fabricated Desktop Abrasive jet machine as part of capstone project for bachelor's degree. Helped university's Non-Traditional Manufacturing lab in installing the machine for further development.

INTERNSHIPS

CADFEM, Hyderabad,India. June 2016 - July 2016.

Performed structural analysis on gears of wrist watches using ANSYS Workbench.

Fenoplast Limited, Hyderabad,India. June 2014 - July 2014.

Performed maintenance of P.L.C systems and sensors responsible for P.V.C film production.

Robogenesis, Bangalore,India July 2013.

Designed a servo motor driven robotic arm using information technology skills.

ACTIVITIES AND AWARDS

- Led team responsible for managing media and data in Nonlinear Dynamics Conference(NODYCON), Rome 2019
- Sapienza Aerospace Student Association(AIAA-Student chapter) - Advisor for International students (2019-2020)
- American Society of Mechanical Engineers (ASME) – Student Member (2017-2018)
- American Institute of Aeronautics and Astronautics (AIAA) – Student Member (2017-present)
- Team Lead, One India, Lovely Professional University, 2015(Winner) and 2013.
- Runner up - Robotics at ANANT (Punjab University Tech-Fest), 2013.