

MOHAMMED HAFEEZ

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EDUCATION

Master of Science: Mechanical Engineering, University at Buffalo, The State University of New York, December 2022

- Dynamics and control specialization

Bachelor of Engineering: Mechanical Engineering, PES University, August 2016

- Automotive specialization

SKILLS & TOOLS

SOFTWARE: MATLAB, Simulink, HyperMesh, ANSYS, CATIA, MEScope, LABVIEW, COMSOL, AutoCAD, Python, CoppeliaSim

TECHNICAL SKILLS: Simulation, post processing, analysis, designing

RESEARCH AND PROJECTS

University at buffalo/TRAVELLING WAVE GENERATION ON A BEAM: CATIA, MATLAB, COMSOL

- Observed simulation of traveling waves on a beam by imitating biomimicry observed in aquatic life promoting faster movement and control of boundary layer across span beam surface
- Considered beam was built with placement of piezoelectric actuators promoting generation of traveling waves
- Implemented methodology can be extended for practical applications such as wings. Studied and currently implementing method on modeled wing
- Worked as assistant under guidance of Professor along with PhD student

PES University/MODAL ANALYSIS OF A BIKE CHASSIS: MEScope, CATIA, HyperMesh, ANSYS

- Researched modal analysis of a bike chassis by modeling a chassis, meshing, and then performing modal analysis for free-free vibration conditions of modeled structure
- Compared simulation data by experimentally collecting mode shapes of given structure using MEScope and validating simulation data
- Imitated situation where an engine of a bike was provided a driving force for a forced vibration condition
- Worked with team of 3 under guidance of assistant professor

University at buffalo/EXOPLANET DETECTION: MATLAB

- Analyzed data extracted by Kepler mission for detection of exoplanets
- Theorized dynamics of individual space bodies based on extracted data
- Classified bodies as habitual/non-habitual based on comparative analysis to dynamics of Earth

University at Buffalo/SATELLITE DYNAMICS: MATLAB

- Propagated an initially placed satellite refueler from its orbit to an equatorial geosynchronous orbit for refueling another satellite mathematically
- Theorized required orbital maneuvers, date/time for total mission, calculated total change in velocity required for orbital maneuvers

University at Buffalo/EFFECT OF TOE, CAMBER, AND CASTER ON VEHICLE PERFORMANCE: MATLAB

- Analyze how wheel angles effect road vehicle performance
- Analyze dynamical changing of performance
- Study performance effects on different vehicle classes

PRTHU Fundamentals/PCB BOARD DESIGN: Hypermesh

- Interned in designing and understanding process of selecting thermal components for lab testing telecom grade RF-Amplifier PCBs using a theoretical analysis approach using finite element analysis

WORK EXPERIENCE

INTERN, PRTHU FUNDAMENTALS PVT LTD, BANGALORE, INDIA: June 2019 - July 2019

- Conducted research on design and analysis of PCB boards for telecom towers by analyzing thermal dissipation properties of manufacturing materials as criteria for design

RESEARCH PAPERS

- OPERATIONAL MODAL ANALYSIS OF A BIKE CHASSIS: <https://www.ijariit.com/manuscript/operational-modal-analysis-of-a-bike-chassis>

MEMBERSHIP

- ASSISTANT FOR RESEARCH- Assisted in research of travelling wave generation at IDEAS lab (UB)

EXTRA CURRICULARS

- CAPTAIN: Undergraduate university Basketball team with various accolades
- CAPTAIN: School Basketball team

EXTRA COURSES AND CERTIFICATIONS

- Modern robotics (Northwestern university)
- Self-driving cars (University of Toronto)
- Sports and building aerodynamics (TU Eindhoven)
- Electric cars-technology business and policy specialization (TU Delft)
- Machine Learning (Stanford University)
- Python 3 programming (University of Michigan)