Animesh Rajvanshi

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EDUCATION

Bachelor of Science in Mechanical Engineering **December 2024**
Arizona State University, Tempe, AZ GPA: 3.48/4.0
Engineer In-Training (EIT), Arizona State Board of Technical Registration March 2025

TECHNICAL SKILLS

CAD & CAE Tools: SolidWorks • Onshape • AutoCAD • ANSYS • Fluent • CIVA NDT • Blender
Languages & Platforms: MATLAB • C • Python • JavaScript • Arduino • LabView

WORK EXPERIENCE

Nanoelectronics Metrology & Failure Analysis Researcher, Celano Lab **May 2024 - Present**
Arizona State University Tempe, AZ

- Implements scanning acoustic microscopy (SAM) in simulation using CIVA NDT software, on chiplets from industry leading vendors, to identify defects, with a proprietary scaling model (k=1000, 1 GHz to 1 MHz, for 10 μm features) while preserving wave physics equivalence (d/λ)
- Creates CAD models for SAM simulation and 3D assets for supplementing the lab's research papers and projects
- Reviews literature on Cu-Cu hybrid bonding and failure mode challenges and solutions in advanced 3D packaging

Executive Learning Assistant, Fulton Schools of Engineering Tutoring Centers **November 2021 - December 2024**
Arizona State University Tempe, AZ

- Aided engineering students' progress by tutoring courses such as control theory, differential equations, dynamics, fluid and solid mechanics, amongst others; awarded Tutor of the Month, January 2023
- Hosted trainings for junior tutors, and prepared hiring assessments and conducted interviews for fresh applicants

PROJECT EXPERIENCE

Team Member, Wrong-Way Driving Prevention System MEE Capstone **January 2024 - December 2024**
Arizona State University Tempe, AZ

- Contributed in designing, machining, and assembling a mechanical wrong-way driving prevention system, comprised of an active speed hump made of rows of depressible stainless steel ramps
- Engineered an Arduino Uno R3 based subsystem to discern driving direction by checking ramp depression order
- Collaborated on SolidWorks CAD modeling and ANSYS finite element analysis, achieving safety factors of 2.5-3.3 under 1000 lbf loads, validated through low-speed prototype tests

Hyperspectral CubeSat Project Manager, Sun Devil Satellite Laboratory **July 2021 - July 2022**
Arizona State University Tempe, AZ

- Established a scientific mission, to catalog ocean plastic pollution, for a CubeSat equipped with a hyperspectral camera (1000-1700 nm, 50 m GSD) by managing a team of competent engineering students
- Developed a conceptual design leveraging SWIR absorption peaks (1215 nm, 1410 nm) for plastic detection, and a theoretical framework for a 500 km sun-synchronous orbit deployment
- Refined the proposal, integrating an Iridium terminal for data relay, eliminating ground station dependency

Watts on the Moon Project Manager, Sun Devil Satellite Laboratory **August 2020 - May 2021**
Arizona State University Tempe, AZ

- Designed a lunar power delivery system for NASA's Artemis missions, adapting a JAXA-Toyota Lunar Cruiser rover to deploy a scalable cable network connecting power generation plants to lander-based battery hubs
- Modeled a trencher inspired mechanism using SolidWorks and Blender, to deploy cables, with space-grade connectors, ensuring resilience to thermal extremes and regolith, with 100 kWh storage per hub for lunar nights

OTHER ACTIVITIES

Blue Belt, Brazilian Jiu Jitsu **September 2021 - Present**
GD Jiu-Jitsu Academy Tempe, AZ

- Volunteers to assist the kids and teens program, teaching self-defense and emotional resilience in the spirit of play
- Active competitor with a comprehensive tournament record (4 Gold, 2 Silver, 4 Bronze, 1 MVP Competitor award)

CERTIFICATIONS

- Fundamentals of Engineering (FE) Exam, *National Council of Examiners for Engineering and Surveying*
- Astrophysics Xseries Course, *Australian National University, edX*