Sparsh Desai

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EDUCATION

Georgia Institute of Technology, Atlanta GA, **GPA**: 4.0, **Year:** 3rd
Bachelor's and Master's in Aerospace Engineering: AE Honors Program — Graduation: May 2024

Colonia High School, Colonia NJ, **GPA:** 4.24/4.33, **ACT:** 34/36
High School Diploma — Completed: June 2019

WORK EXPERIENCE & RESEARCH

Ben T. Zinn Combustion Laboratory, Atlanta GA
RQL Aero-engine Combustor: Undergraduate Research Student — Aug 2020 – Present

- Helped redesign RQL Combustor rig for testing gaseous NO_x and CO_2 emissions and noise nuisance
- Conducted heat expansion analysis and sealing trade study for redesign parameters and presented findings
- Logged P&IDs from existing test setup to help design new setup for better reliability and data accuracy

Collins Aerospace, Wilsonville OR
Manufacturing Engineering-Ops Intern — May 2021 – Aug 2021

- Juxtaposed company AOP with fixture documentation on a tight 3-week deadline and communicated between manufacturing, design, and operations to store unused fixtures offsite, saving 40% of floorspace
- Researched, developed, and implemented improvements in the Environmental Stress Screening lab for commercial and military HUDs, focusing on reducing risk of injury and damage while streamlining lab layout
- Designed & implemented tooling to assist production, using traditional machining and 3D printing

Georgia Tech AE Machine Shop, Atlanta GA
Assistant Machinist — Jan 2021 – May 2021

- Created complex parts for AE research labs with professional machinists and tooling engineers
- Assisted other students in machining for personal and academic projects
- Gained hands-on experience with operating the mill, lathe, CNC mill, water jet, and other shop machines

Liberty Science Center (LSC), Jersey City NJ
Volunteer Ambassador (800+ hours) & Summer Camp Instructor — Apr 2015 – Jan 2020

- Organized and instructed STEM-oriented courses (i.e., Aeronautics, Drone Design, Racecar Science)
- Pitched and implemented two significant guest experience enhancements for better exhibit interaction
- Engaged guests of all ages during exhibit tours, science activities, and storefront product promotion

ENGINEERING LEADERSHIP & ACTIVITIES

Yellow Jacket Space Program (YJSP), Atlanta GA
Ground Feed System Team Lead; Propulsion Design Engineer and Machinist — Jul 2020 – Present

- Spearheaded *YJ-1S* and *YJ-1Regen* engines' cryogenic flow and hot fire tests to proof bi-propellant rocket engine, by operating the feed system, writing test procedures, making key decisions, and reviewing test data
- Optimized design, machineability, and performance of LOX-centered pintle injector
- Machined high precision parts for newest regeneratively cooled engine and multiple one-off projects
- Designed and built pneumatic piston actuator systems for valves and other feed system components

NASA Student Launch Initiative (USLI), Atlanta GA
Payloads: Lead Deployment System Engineer — Aug 2019 – Mar 2020

- Created a controllable payload and its deployment system as a part of the payloads subteam
- Designed UAV deployment system that reoriented the payload based on the rocket's landing position
- Collaborated with other subteams to machine deployment parts that integrate into the airframe
- Used SolidWorks to develop a remote-controlled folding quadcopter for gathering soil samples

Academy of Model Aeronautics (AMA), Edison & Neptune County NJ
Aeromodeller and IEEE Educator — Jun 2012 – Present

- Iteratively designed, constructed, tested, and flew model airplanes
- Gained experience in troubleshooting small/model scale control systems, repairs, and airframe design

Other Activities: Project Boom UAV, Grand Challenges, GT Ramblin' Raas, Nehru Inst. of Mountaineering

SKILLS

- **Software & Programming:** SolidWorks, Siemens NX, MATLAB, Fusion360 CAM, SysML, MS Office, Java
- **Manufacturing:** 3 axis CNC, manual lathe, manual mill, water jet, soldering, 3D printing, shop tools
- **Languages:** English, Gujarati, Hindi

AWARDS & INTERESTS

- *NJ Governor's Jefferson Award (2017):* Awarded for Outstanding Public Service in STEM
- *Academy of Model Aeronautics (2019):* C.H. Grant Scholarship and Toledo Weak Signals Scholarship
- *Hobbies and Interests:* Skiing, Frisbee, Mountaineering, Aeromodelling, Injector Design, Tabla, Raas