SHIVAM SHARMA

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EDUCATION

University of Michigan - Undergraduate Senior September 2015 - Present
Major - Aerospace Engineering
Minor - Computer Science

EXPERIENCE

RedBrick AI [Work] January 2019 - Present
Co-founder, Developer

· RBAI is a configurable software platform for building and managing computer vision datasets
· Designed and built front-end using React-JS, HTML, CSS.
· Built backend (Python, AWS) functionality for automated/pre-labeling.
· On-boarded 2 research team customers using RBAI for generating self-driving car data-sets (MCity, UofM Aerospace Lab).
· Led marketing, lead-generation and customer discovery effort

ACAS Xa Neural Network Verification [Research] May 2018 - Present
Research Assistant, Department of Aerospace Engineering

· Worked on a joint project with Stanford exploring Aircraft Collision Avoidance using AI
· Co-authored paper, and presented peer-reviewed research at AAAI symposium at Stanford.
· Developed linearized safe region analysis approach to study ACAS Xa deep neural network behavior
· Using Formal verification techniques, analyzed DNN behaviour, and revealed thousands of counter-examples. Software written in Python and MATLAB.

Michigan Hyperloop (SpaceX Competition) [Project] September 2015 - September 2017
Co-Founder, Engineering Lead

· Team 1 of 23 (from over 300) selected by SpaceX to build a prototype vehicle (Competition I and II)
· Responsible for overseeing design and production of dynamic systems - levitation, braking and control
· Conducted analysis on magnetic halbach array forces and stability
· Manufacturing lead for Competition I as part of 'OpenLoop Alliance'.
· Manufactured 18ft. carbon fiber shell - design, tooling, layups.

Miniature Tether Electrodynamics Experiment [Research] January 2018 - December 2018
Orbits Attitude Determination Control team

· MiTEE at UMich aims at testing ED tethers as a propulsion concept for small satellites
· Wrote software on Arduino to communicate with IMU through SPI bus, and filter noisy data in real-time
· Designed test set-up to remotely test IMU using Raspberry Pi

TeamIndus (Google Lunar XPrize) [Work] May 2017 - June 2017
Spacecraft Structures Intern

· Selected as one of four companies for the GLXP - challenging companies to send a rover to the moon
· Built 3-DOF model on MATLAB to analyze landing accelerations and landing gear response
· Simulated crushable honeycomb core suspension and contact with lunar soil as non-linear spring forces on ADAMS to study accelerations and compression

TECHNICAL STRENGTHS

Computer Languages	C++, MATLAB, Python, HTML/CSS, Javascript, LaTex
Software Tools	React-JS, Flask, NumPy, GitHub

Relevant Courses

Core Courses
Gas Dynamics, Aerodynamics, Propulsion (enrolled)
Structures I, Structures II
Dynamics & Vibration, Dynamics & Controls
Space Flight Mechanics
Aero lab I, lab II, lab III, lab IV
Space Senior Design (enrolled)

Other Courses
Programming and Intro Data Structures
Data Structures and Algorithms
Discrete Math
Electrical Circuits, Systems, Application
Aero Independent Study (enrolled)
Web Systems (enrolled)

OTHER PROJECTS

Wall-climbing Drone
Team member

Fall 18
AEROSP 405

· Worked in team of 5 to design, test, build a wheeled wall-climbing robot
·

Students' Placement Office
Internship Coordinator

April 2015 - Present
IIT Kanpur

· Coordinating with team of 20 students responsible for facilitating internship proceedings of 650 students involving 150 companies
· Responsible for developing contacts with corporate recruitment teams of several firms for internship and placements
· Organized sessions on Personality Development and Career Awareness by esteemed alumni for over 1600 students

Hall Executive Committee
Secretary

April 2014 - Nov 2014
IIT Kanpur

· Coordinated with 12 members to led a team of 200 students in inter hall technical, cultural and sports competition of institute
· Planned an annual budget of 2 lakhs for proper functioning of hostel with more than 400 residents

Extra-Cirrucular

Secured Gold in M.P. State Throw Ball competition and represented district in State Hand Ball competition

Represented Institute in Udghosh13 and secured second prize in Kho-Kho intramurals

Secured second prize in Dance Drama competition in Galaxy14, inter hall cultural competition of IIT Kanpur

Won second prize in Electromania, circuit game designing competition in Takneek13, inter hall technical festival of IIT Kanpur