

Rahul Shagrithaya

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SKILLS

Software: Siemens NX, Autodesk Fusion 360, CATIA V5, Autodesk AutoCAD, Ansys Mechanical
Manufacturing: Radial drilling, Dremel, composite lay-up, vacuum bagging, grinding, lathe, soldering
Programming: Python, C++
Languages: English (Fluent), Hindi (Fluent)

EXPERIENCE

Research Intern, CuriousTech Lab, Manipal Institute of Technology | Manipal, India August 2019 – December 2019

- Collaborated with a professor to design a Special Endoscopic device to improve diagnosis of small visible tumours in bladders
- Studied and analysed already available endoscopic scissors and developed mechanisms for the new device
- Utilized Siemens NX to design CAD Models and developed high-quality images, videos, and illustrations in KeyShot
- Arrived at a novel surgical instrument which was published in the Indian Patent Office in December 2019

Research Intern, Cracow University of Technology | Kraków, Poland June 2019

- Assisted a professor in the Malopolska Laboratory of Energy Efficient Building in designing a heat exchanger to reduce energy consumption
- Analysed a heat exchanger to transfer heat from hot kitchen air to cold water which would then be utilized in restrooms
- Used Autodesk Fusion 360 and Ansys to model and analyse basic heat transfer and fluid interactions
- Learnt about the latest research on the reduction of energy consumption

Structural Engineer, AeroMIT UAV Research Project Team | Manipal, India April 2018 – April 2019

- Collaborated with an interdisciplinary team of 35 students divided into 5 subsystems researching on Unmanned Aerial Vehicles (UAV)
- Used Fusion360 and CATIA V5 to design UAV structures and proposed optimised wing and fuselage structures to cut down weight and size
- Fabricated prototypes using composite lay-up, vacuum bagging, and laser cutting according to drafts sent by the aerodynamics subsystem
- Conducted strength, endurance, payload, flying, propeller and BLDC compatibility tests, and investigated crashes and malfunctions
- Created CAD templates for aircraft parts in AutoCAD that were sent for laser-cutting
- Designed a fixed-wing aircraft for SAE that can be assembled in less than 90 seconds and carry 1.5Kg of payload to disaster-struck locations
- Participated in regional aeromodelling competitions at IIT Bombay, NIT Surathkal, and NIT Calicut

PROGRAMMING PROJECTS

COVID-19 Desktop Tracker April 2020

- Programmed a stand-alone Windows software to retrieve and view COVID-19 related data using Python
- Utilized three Application Programming Interfaces (API) to request data such as total cases, deaths, recoveries, tests, and latest news
- Used PyQt to design a Graphic User Interface (GUI) and matplotlib module to plot graphs

Reddit Statistical Analysis April 2020

- Wrote a Python script to retrieve post and subreddit data from the Python Reddit API Wrapper (PRAW)
- Plotted the relation between the creation time and the total number of posts of top 50 subreddits that made it to the top 100 posts
- Examined the plot to conclude that most of the top posts were created between 1300h and 1600h UTC

LEADERSHIP EXPERIENCE

Senior Structural Engineer, AeroMIT UAV Research Project Team | Manipal, India April 2019 – November 2019

- Recruited competent undergraduate engineering students into AeroMIT Team
- Proctored, assessed written tests, and interviewed the junior subsystem members of the team
- Aided in organising the task-phase and induction programme

Category Organiser, TechTathva SkyRush Event | Manipal, India October 2018

- Hosted an unmanned aerial vehicle flying event in collaboration with Manipal Institute of Technology
- Managed and coordinated with the event participants to resolve disagreements
- Inspected participants' unmanned aircraft to ensure compliance with event regulations

ACHIEVEMENTS

- **Patent published** - Indian Patent Office - "A scissors-needle system for intra-cavitary hydro-dissection and excision of tissues" - 201941051409
- **World Rank 5** in the SAE Aero Design East 2019 Collegiate Design Series hosted by Lockheed Martin in the micro-class category in Texas, USA
- **1st and 2nd Rank** in the Albatross Flying Competition 2018 at the National Institute of Technology in Calicut, India

EDUCATION

Manipal Institute of Technology | Manipal, India Graduation in May 2021
Bachelor of Technology, Major: **Mechanical Engineering** | Minor: **Business Management**
Cumulative GPA: **7.93/10.0**

SVPV Junior College | Mumbai, India May 2017
Class 12, HSC Board; Score: **83.23%**

RBK School | Mumbai, India May 2015
Class 10, ICSE Board; Score: **90.17%**