Aakash

Junior Undergraduate
Mechanical Engineering
Indian Institute of Technology Tirupati

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Academic Details

Year	Degree	Institute	CGPA/Percentage
2016-Present	B.Tech in Mechanical Engineering	Indian Institute of Technology Tirupati	8.63/10.0
2016	Class XII, CBSE	Kendriya Vidyalaya No. 1 Ahmedabad	92.6%
2014	Class X, CBSE	Kendriya Vidyalaya No. 1 Ahmedabad	10.0/10.0

Scholastic Achievements

- Secured **Department Rank 3** at the end of four semesters
- Secured **All India Rank 365** in National Entrance Screening Test 2016
- Received **Certificate of merit** for stellar performance in CBSE AISSE Exam
- Secured **State Rank 55** in National Science Talent Search Examination (NSTSE) organized by Unified Council
- Qualified in **National Defence Academy Exam** conducted by UPSC (Union Public Service Commission)

Work Experience

Thermoelectric (TE) materials and the Wiedemann Franz Law | Research — IIT Tirupati
Prof. PC Deshmukh, IIT Tirupati and Prof SR Valluri, UWO Canada — *June 18 - Present*

- Focused on maximizing the figure of merit of TE materials and obtained solutions in terms of the Lambert W function and the offset logarithmic function
- Development of a program to obtain solutions to the offset log function is underway
- Performed a rigorous research and contributed towards the generalization of Wiedemann Franz law, currently in a process to author a paper on the same

JEDI* Scheduling Tool Optimisation | Internship — Ford India
Rahul Giri, MP&L division, Ford India — *June-July 2018*

- Optimized scheduling for blanking and stamping processes to increase the efficiency of the job
- Collected and analysed the Stamping and Blanking data and proposed the required system changes for smooth flow of data across platforms
- Observed and studied the associated processes like drawing, trimming, piercing, flanging, restriking etc
  *Just-in-time Execution Distribution Information

Projects

Desktop app for designing helical spring — *Oct 2018*
Prof. Sriram Sundar, IIT Tirupati

- Designed full fledged standalone application in Python using tkinter with user friendly interface
- Designed and implemented an algorithm to compute parameters like wire and spring diameter, figure of merit etc
- Incorporated both static and dynamic conditions and provided a feature to choose from various possible designs

Solar Radiation Mapping — *April 2018*
Smart India Hackathon Hardware 2018

- Developed an mobile application to record solar radiation data using the inbuilt proximity sensor

- Designed a RESTful API in NodeJS to communicate with MySql server on the local network
- The acquired data can be used for analysis of patterns in the solar radiation

Safety Devices for Small Fishing Vessels *Dec 2017*
Inter IIT Tech Meet 2018, IIT-Madras

- Made a low cost AIS receiver using generic Digital USB TV Stick DVB-T
- Prepared structure for solar charging and battery management system
- Integrated the device with the GPS module

Optimizing flow rate of carburetor through CFD analysis *Oct 2017*
Independent Project

- The fluid flow in venturi of the carburetor was analyzed with different nozzle and flow plate angles
- It was observed that the pressure distribution is quite uniform for fuel discharge nozzle angle of 30°

Persistence of Vision Display *Aug 2017*
Prof. TS Natarajan, IIT Tirupati

- Fabricated a mechatronics display based on the persistence of vision of human eye
- Implemented Bluetooth communication to change the display using mobile app
- Minimised the mechanical vibrations produced at high rotations

Relevant Courses

Mechanical Engineering: Design of Machine Elements*, Instrumentation & Control*, IC Engines*, Turbomachinery*, Kinematics & Dynamics of Mach., Heat Transfer, Eng. Mechanics, Fluid Mech., Thermodynamics, Strength of Materials

Mathematics and Computer Science: Differential equations, Linear Algebra, Real Analysis and Calculus, Computational Engineering

Online Courses: Robotics: Dynamics and Control, Eng. Simulations, Android Basics (Udacity)
**Expected to be complete by the start of internship*

Technical Skills

- **Programming Languages and Tools:** C, C++, LaTeX, Android Studio, Arduino IDE
- **CAD:** Creo Parametric, Autodesk Inventor, AutoCAD, Fusion360
- **Simulation:** ANSYS Workbench Fluent, APDL, ANSYS Mechanical

Extra Curricular Activities

- Represented the institute at Inter IIT Tech Meet 2018 held at IIT-Madras
- Coordinator for Regional Science Centre, National Service Scheme, responsible for conducting activities for students
- 1st Runner up in the institute level Glass Painting Competition organised by Artista-IITT