Work Experience

Algo Trading Using Rust | *Summer Intern, Glue Labs Private Ltd.* *May'21 – Jun'21*

- Explored the **Rust** programming language and basic **ML** algorithms such as gradient boosting
- Learned the basic concepts of stock trading like **candlestick chart analysis** and **indicators**
- Analyzed the OHLC data of five different NSE stocks and traced technical analysis indicators such as **Exponential Moving Averages** and **Fibonacci pivot levels** for different time frames
- Utilized the polars dataframe library and the xgboost crate for the prediction of close prices

Projects

Junior Design engineer | *IIT Bombay Racing* | *Suspension* *July'20 – July'21*

Faculty Advisor: Prof. Amber Srivastava, Department of Mechanical Engineering, IIT Bombay

IIT Bombay Racing: A cross functional, 100+ member team aimed at designing and fabricating electric race cars for the Formula Student competition held annually at Silverstone Circuit, UK

- Designed models of suspension parts such as A-arms and mounts using SOLIDWORKS software
- Analysed the various types of active and adaptive suspension mechanisms used in different vehicles
- Enlightened trainees through modules, about the double wishbone suspension used in the car
- Conducted a session for trainees with the help of Co-JDEs about the suspension subsystem
- Prepared questions on suspension for the team selection quiz and aided in the correction of papers
- Helped in the conduction of the fresher's orientation and created a video teaser for the event

Crash Detection Sensor | *Course project, Mechanical Measurements* *Jan'21 – April'21*

Guide: Prof. Dipanshu Bansal, Department of Mechanical Engineering, IIT Bombay

- Designed a sensor based on **accelerometer** and **potentiometer** principles taught in the course
- The sensor detects **rapid acceleration** or **deceleration** of the vehicle in the event of a crash
- The output from the sensor can be used in activating **seat belt tensioner** and **airbag** systems

Metal Casting Simulation | *Course project, Manufacturing Processes I* *Jan'21 – April'21*

Guide: Prof. Pradeep Dixit, Department of Mechanical Engineering, IIT Bombay

- Prepared a CAD model of the given cast along with appropriate riser design based on intuition
- Imported the model into the e-foundry website and performed simulations on it to find hotspots
- Performed analysis on the design and determined efficiency of the cast using Chvorinov's rule

Chassis Dynamometer Data Analysis | *Self project* *April'21 – May'21*

- Analysed dynamometer data of a vehicle by using numerical analysis methods like interpolation
- Created graphs corresponding to dyno data of a Honda Civic and identified the effect of VTEC
- Compared the areas under the torque curves of factory and tuned settings of the vehicle showing the impact of tuning on the performance which is optimized for low and high RPM operations

Automated Quiz Generating System | *Self Project* *Nov'15 – Dec'15*

- Implemented a Java program in **BlueJ environment** using the concepts of switch case, arrays, and buffered reader to generate a custom quiz from a set of general knowledge questions

Achievements

- Qualified Stage 1 of the **National Talent Search Examination**, conducted by NCERT, 2016
- Received 100% **scholarship** for senior secondary education through FIITJEE's Big Bang Edge Test
- Cleared all 8 levels and 3 grand modules of **Abacus** under the SIP Abacus Programme

Technical Skills

- **Programming Languages**: C++, Java , Rust
- **Software**: SOLIDWORKS, AutoCAD, Ansys, MATLAB, Git/Github, LaTeX
- **Workshop Skills**: Lathe and Shaping Machine, Welding, Fitting

Courses Undertaken

- **Mechanical**: Strength of Materials, Manufacturing Processes I, Mechanical Measurements, Solid Mechanics, Thermodynamics, Fluid Mechanics, Structural Materials, Engineering Mechanics
- **Mathematics**: Introduction to Numerical Analysis, Linear Algebra, Calculus
- **Other courses**: Introduction to Electrical and Electronics Circuits, Economics, Biology, Basics of Electricity and Magnetism, Organic and Inorganic Chemistry, Physical Chemistry, Computer Programming and Utilization, Quantum Physics and Application
- **Lab courses**: Manufacturing Practice Lab, Solid Mechanics Lab, Fluid Mechanics Lab, Chemistry Lab, Engineering Graphics and Drawing, Physics Lab

Extra Curricular Activities

- **Social Service**
  - Participated in community service for **Covid-19 relief** under Cyberabad Metropolitan Police
  - Volunteered to teach science to **visually challenged students** at Devnar School for the Blind
  - Engaged in **animal welfare** activities like tick removal and feeding at Blue Cross Of Hyderabad
- **Sports**
  - Underwent **80 hours** of training over a year in **badminton** as a part of the NSO, IIT Bombay
  - Participated in regional **badminton** tournaments, under the Badminton Association of India
  - Won the 2019 Badminton tournament organised by the Telugu Cultural Association, IIT Bombay
  - Served as a Captain of a House for the school sports day
- **Other**
  - Published an **article** in the July 2021 edition of IIT Bombay Racing's Milestone magazine