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| **SACHIN UMRAO** | **BT-MT Dual Degree**  **Department of Mechanical Engineering**  **Indian Institute of Technology Kanpur** |

**ACADEMIC RECORD**

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| **Year** | **Degree** | **Discipline** | **Institute/Board** | **CPI\*/%** |
| **2017-2018** | M. Tech. | Mechanical Engineering | IIT Kanpur | 9.5\*/10 |
| **2013-2017** | B. Tech. | Mechanical Engineering | IIT Kanpur | 7.5/10 |
| **2012** | XII Board | Mathematics | U.P. State Board | 84.6 |
| **2010** | X Board | Mathematics | U.P. State Board | 90.0 |

\*CPI at the end of eighth semester

**SCHOLASTIC ACHIEVEMENTS**

* Selected in **IIT-JEE Advance** in 2013 with **AIR-2925**
* Selected in **IIT-JEE Mains** in 2013 with **AIR-1628**
* Secured **AIR-903** in **Uttar Pradesh State Engineering Entrance Examination(UPSEE)** in 2013
* Selected at **National Level** in **National Talent Search Examination(NTSE)** in 2008
* Scored **A** grade in Advanced English Proficiency Test (AdEPT) organized by English Proficiency Program IIT Kanpur

**M. Tech. Thesis (Thesis Supervisor: Dr. Bishakh Bhattacharya) (2017-2018)**

**Development of Machine Learning Algorithms for Defect Detection and Defect Characterization in Gas Pipelines**

* Development of classification algorithms for Pipeline Health Monitoring System for gas pipeline
* Implemented supervised Support Vector Machine (SVM) based model for defect detection
* Applied supervised Gaussian Mixture Model for detection of anomaly detection on sensor data from MFL and LED-LDR

**Internship: Nucleus Software Pvt. Ltd., Noida, U.P. (May2016-July2016)**

* Worked on Lazy Loading technique to improve performance of Company’s flagship product Online Loan Management System
* Applied HTTP Request optimizations to reduce time lag in application when used in low speed internet
* Worked on automatic view porting of web application.

**RELEVANT COURSES UNDERTAKEN**

**Mathematics and Programming:** Mathematics-I(Calculus), Mathematics-II (Linear Algebra), Complex Analysis, Partial Differential Equations, Fundamentals of computing

**Robotics:** Introduction to Robotics, Robot Actuators and Manipulators, Probabilistic Mobile Robotics

**Nuclear Engineering:** Non-Destructive Testing, Nuclear Power Engineering-II, Nuclear Reactor Physics, Monte Carlo Methods for Particle Transport, Neutron Transport Theory

**Mechanical Engineering:** Thermodynamics, Energy Systems, Manufacturing Processes, Solid Mechanics, Theory of Machines and Mechanisms, Fluid Mechanics, Heat and Mass Transfer, Engineering Drawing

**KEY-PROJECTS**

**Design and Development of Pipeline Health Monitoring Robot based on smart sensor embedded rotating probes and an efficient data communication(GAIL)** (Duration: May2015-July2015)

* Designed and Developed GUI Application in Python to visualize data obtained from various sensors mounted on Pipeline Health Monitoring Robot (PHMR).
* Fixed bugs in Academic version of GUI Application developed in JAVA.

**Optimal Path Planning in Dynamic Environment** (Duration: Jan 2016-April 2016)

(Course project EE698: Probabilistic Mobile Robotics)

* Developed algorithm for avoiding dynamic obstacle for robots mainly used in warehouse like environment.
* Used ROS (Robot Operating System) language for developing algorithm and Gazebo simulator for demonstration of performance.

**Automatic Railway Barrier** (Duration: Jan 2015-April 2015)

(Course project TA202A: Manufacturing Processes)

* Designed and fabricated a completely mechanical mechanism to automatically close railway barrier before arrival of train and open it after the train passes for remote areas which are deprived of electricity.
* Worked in a team of 8 members and used processes like lathe, milling, drilling, welding, shaping, turning etc.
* Won **Appreciation Award** for best projects.

**RELEVANT SKILLS**

* **Programming Languages:** C/C++, Python, HTML, CSS, PHP
* **Software:** MATLAB, Auto CAD, Autodesk Inventor
* **Operating Systems:** Linux, Mac OS, Windows

**POSITIONS OF RESPONSILBILITY**

**Coordinator, PRAYAS Club** (April2015 – March2016)

* Led a team of **20 volunteers**, coordinated and planned the activities of club to provide quality education to **120 kids** of nearby villages
* Organized PRAYS Premier League (Cricket Tournament for kids), PRAYAS Athletics Meet, PRAYAS English Summer Program apart from regular classroom activities.
* Established **PRAYAS Scholarship** for students of PRAYAS pursuing graduation.

**Secretary, Association of Mechanical Engineers(AME)**(April2104-March2015)

* Organized Fresher’s Meet for new students of Mechanical Engineering Department Batch-2014
* Organized Farewell Party for passing out students of Mechanical Engineering Department Batch-2014
* Organized Happy Hours for students of Mechanical Engineering Department

**Teaching Assistant (Course: ME601A, Instructor: Dr. Bhaskar Dasgupta) (Aug2017-ongoing)**

* Assisting in conduction of class of 40 students.

**Secretary, Hindi Sahitya Sabha(HSS) (April2104-March2015)**

* + Organized various events such as Hall level Debates, Workshops.
  + Organized various events in Fresher’s Meet 2014

**EXTRA CURRICULARS**

* Volunteer for a year in PRAYAS (May2014-ongoing). Teaching underprivileged kids of nearby villages.
* Won **third prize** in **Debate** organized on Hindi Diwas 2014
* Won **third prize** in **Story Writing** in Inter Hall Competition GALXY-2014
* Member of Alumni Contact Program (Jan2014-Feb2014)
* Participated in **Third Science Conclave: A Congregation of Nobel Laureates** (Dec2010) organized by MHRD and DST.

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