Shivam Goel

Third Year Undergraduate, IIT Kanpur
Department of Electrical Engineering

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Academic Qualifications

Year	Degree/Certificate	Institute	CPI/%
2018 - Present	B.Tech in Electrical Engineering	Indian Institute of Technology Kanpur	9.31/10
2018	Class XII (CBSE)	GMSSS MHC, Manimajra	93.4%
2016	Class X (ICSE)	Little Flower Convent School, Panchkula	98.4%

Scholastic Achievements

- Awarded **Academic Excellence Award** in 2019 and 2020 for exceptional performance in academics
- Adjudged **6th across India** (among 84 universities) in **ABU-Robocon'19** Stage-1 for proposing feasible robot **design solution** and **procured 55/60 points** in Stage-2 for submitting a video of the bot **performing the given tasks**
- Secured **All India Rank 1529** in **JEE Advanced** 2018 among 0.23 million shortlisted candidates
- Achieved **All India Rank 1198** in **JEE Mains** 2018 among more than 1.2 million candidates
- Awarded **Certificate of Merit by CBSE** for being in **top 0.1%** of students with **100/100** in **Mathematics**
- Secured **1st rank** in Tricity (Chandigarh,Mohali,Panchkula) and **Haryana** in class 10th ICSE board exams
- Received **CICS Topper** and cash prize of **INR 10k** for best performance among all branches of CICS group in Class 10th
- Awarded **Champion of Champion** in 2008, 2011 and **Champion** in 2009, 2010 at the **National Competition on Japanese Soroban and Mental Maths** and got selected all 4 times to **represent India** at **International Round**
- Received **High Distinction** in 2014 and **Distinction** in 2010 and 2011 in Mathematics in **International Assessments for Indian Schools** exam conducted by **University of New South Wales, Australia**
- Secured **International Rank 93** (among 25k students) in the finals of **6th International Maths Olympiad** organised by Science Olympiad Foundation
- Secured **International Rank 161** (among 25k students) in the finals of **15th National Maths Olympiad** organised by Science Olympiad Foundation

Key Projects

ABU-Robocon, 2019 (ABU Asia-Pacific Robot Contest)   *Oct'18 - Apr'19*
Mentor: Dr. Ashish Dutta, Professor, Department of Mechanical Engineering, IIT Kanpur
- Worked in a team of 15 members and conceptualised the design for a **remote-controlled bot**
- Worked on **CAD modelling, design analysis and fabrication** of the gripping, throwing and locomotion mechanisms
- Managed the team's **technical inventory worth 2.5 lakhs** optimising budget, time and component availability
- Drafted an **Idea proposal-cum-Technical documentation** of the bots for the technical proposal round
- Submitted a working video of bot performing given tasks in record time of **52 seconds within allotted time of 3-min**

Micromouse   *May'19 - July'19*
Robotics Club, IIT Kanpur
- Conceptualised and built an autonomous bot capable of **traversing and solving a maze** in minimum possible time
- Integrated **ultrasonic sensors** on the bot to map the walls by working on **CAD modelling and GPB designing** enhancing the performance and efficiency in sharp turns
- Studied modified **Flood-Fill Algorithm** for path planning to be implemented on the bot

Beam Splitter (Course Project)   *Oct'19 - Nov'19*
Mentor: Shilpi Gupta, Assistant Professor, Department of Electrical Engineering, IIT Kanpur
- Implemented code for **simulating** the **quantum behaviour** of **beam splitters and single photon sources**
- Analysed the **correlation between the outputs of the beam splitter** for various input distributions

Railway Hand Car -Manufacturing Processes I (Course Project)   *Aug'19 - Nov'19*
Mentor: Dr. Anish Upadhyaya, Professor, Department of Materials Science and Engineering, IIT Kanpur
- Designed and simulated **CAD model** of a **hand driven railway car**
- Fabricated model using metallurgical processes like **welding, brazing, sheet metal forming, casting etc.**

Multi Level Car Parking -Manufacturing Processes II (Course Project)   *Jan'19 - Mar'19*
Mentor: Dr. Mohit Law, Assistant Professor, Department of Mechanical Engineering, IIT Kanpur
- Designed and simulated **CAD model** of a **multi level car parking** system
- Fabricated the model using various manufacturing processes and constructed the mechatronic control using Arduino IDE

Technical Skills

- **Programming**: C, C++, Python, MATLAB, Java, SQL
- **Utilities**: Git, LaTeX, Arduino IDE
- **Modelling**: AutoCAD, Autodesk Inventor , SolidWorks

Relevant Coursework
(A*):Exceptional performance in course,(o):Online course

Data Structures and Algorithms	Probability and Statistics	Linear Algebra and ODE
Multivariate Calculus(A*)	Intro to Machine Learning(o)	Fundamentals of Programming
Control System Analysis	Signals, Systems and Networks	Partial Differential Equations
Complex Variables	Microelectronics	Quantum and Wave Phenomena

Positions of Responsibility

Secretary, Robotics IIT Kanpur: *May'19 - Mar'20*
- Mentored **6 freshmen** teams, bagging **3 positions in top 5** thus winning robot-building competition Robotricks, Takneek'19
- Led a team of 6 students that developed a **Wild Soccer robot** and participated in Intra IIT competition Takneek'19
- Assisted in conducting competitions, lectures and workshops on various topics pertaining to the field of robotics

Science and Technology Secretary, Hall Executive Committee, Hall-12: *Sep'19 - Present*
- Nominated for the management of SnT activities and worked in a team of 11 to ensure proper functioning of the hall
- Organized **hall level workshops** for freshers in association with the SnT-clubs for development of **technical skills**
- Managed the SnT budget of **INR 1 lakh** for hall level purchases to be utilized for various intra and inter hall events
- Led a pool of **1300 students** to participate in the Inter Hall competitions organised among 5 other halls

Student Guide, Counselling Service IIT Kanpur: *July'19 - April'20*
- Mentored 6 freshmen for a smooth transition to campus life by supporting them emotionally and academically
- Assisted in conduction of Orientation'19 for **1000+ freshers**; supervised group movements, campus tour, etc.

Extra Curricular activities

Technical
- Qualified for 2nd round in **Integration Bee** organised by **Science Coffee House, IIT Kanpur**
- Stood **4th** in **Electrowiz** organized by **Electronics Club, IIT Kanpur** in Takneek'19

Cultural
- Stood **1st** in **Group Dance** in Galaxy'19 and **overall 2nd** in dance events in Galaxy'19 and Galaxy'20
- Took part in **Orientation'19** and **Freshers'18** group **dance** representing the Dance Club

Sports
- Represented Hall 12 in **Tennis** in **Inferno'18**
- Reached **2nd round** in 11th **Satluj Open Tennis Tournament**