

DWARA NIKHESH BABU

Final Year Undergraduate
Mechanical Engineering

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ACADEMIC QUALIFICATIONS

Year	Degree/Certificate	Institute	CPI/%
2019 - 2023	B.Tech	Indian Institute of Technology, Kanpur	8.43/10
2019	BIEAP (XII)	FIITJEE Junior College, Visakhapatnam, AP	9.75/10
2017	BSEAP (X)	The Sun School, Vizianagaram, AP	10/10

SCHOLASTIC ACHIEVEMENTS

- Secured Overall **1st position** in Formula Bharat 2023 and Business Plan Presentation events in Electric category *2022*
- Secured **18th position** in Formula Bharat 2021 (FB2021) competing against National and International teams *2021*
- Secured **All India Rank 22** in Physics conducted by SIMO Education Indian Physics Olympiad (SIPhO) *2015*
- Secured **Olympiad rank 17** and scored 86.50/100 in International Master Mathematics Olympiad (IMMO) *2012*

PROJECTS, INTERNSHIPS

- Full Stack Development - MERN stack** (MongoDB, Express, React, Node) *(Aug'22 - Sept'22)*
 - Developed dynamic, responsive and maintainable web applications using HTML5, CSS3, ReactJS with my own style sheets.
 - Built my own [🔗 Portfolio-website](#), [🔗 Typing-Test App](#) - measures typing speed, [🔗 Todo App](#) to manage to-do tasks.
 - Learnt Node.js, ExpressJS Server Framework, SQL to develop CRUD, Secure APIs using HTTP server, JSON Web Token.
- PAT Implementation in Nanoemulsions | Dr. Reddy's Laboratories**, Hyderabad | Internship *(May'22 - July'22)*
 - Researched **Process Analytical Technology** (PAT) and learnt about NanoFlowSizer, in-line viscometer and refractometer.
 - Learnt about **flow correction algorithms**, Spatially-Resolved Dynamic Light Scattering, Low-Coherence Interferometry.
 - Developed a mathematical model in MATLAB that gives plots on critical attributes and parameters of in-line viscometer.
- Sports Timetabling Problem | Analytics in Transport and Telecom** course project *(Jan'22 - April'22)*
 - Researched time-constrained round-robin timetables and how they vary with different input parameters and constraints.
 - Developed a program in C++ using IBM CPLEX Optimizer to make timetables and a well-optimized **heuristic**.
 - Solved **optimization problems** like warehouse location, cutting stock and optimal reservation which have huge applications.
- Game of Blocks | Programming Club**, IIT Kanpur *(May'21 - July'21)*
 - Learnt basic mechanisms of **Blockchains**, cryptocurrencies and basics of **Game Theory** and Mechanism Design.
 - Implemented First-Past-the-Post voting and Boston Student Assignment Mechanism (school choice problem) in **Solidity**.
 - Constructed a simple mining algorithm in Python and a **Smart Contract** with a token called MetaCoin in Solidity.
- Dragons-vs-Terminators** | a Tower Defense game in Python *(May'20 - April'20)*
 - Learnt **Python**, Standard Library, third party packages, regular expressions, networked programs(HTTP), web services(API)
 - Implemented Dragons-vs-Terminators game where the goal is to defend the Dragon's territory by obstructing the Terminators.
 - Developed **15** dragon types based on armor, food, damage and attacking strategy using **Object-Oriented Programming**.

TECHNICAL SKILLS

- Programming Languages:** C/C++, Python, MATLAB/Octave, JavaScript, Solidity
- Web Development:** HTML5, CSS3, Bootstrap4, JQuery, NodeJS, ExpressJS, React, SQL
- Tools and Utilities:** Git, Linux Shell Utilities, L^AT_EX, IBM CPLEX, Solidworks, Ansys

POSITION OF RESPONSIBILITY

- Senior Team Member and Vehicle Dynamics Lead** - IITK Motorsports *(April'21 - April'22)*
 - Assisted in overall designing, mainly vehicle dynamics, of a **Formula Student Electric** vehicle with a team of 30+ members.
 - Designed and developed tools and solutions used across subsystems of the team using MATLAB, Simulink and Python.
 - Prepared the team for Formula Bharat 2021 and 2023 and coordinated with team leads to improve overall performance.

COURSEWORK

- Online courses:** Data Structures, NxtWave • Full Stack Development, NxtWave • Machine Learning by Stanford, Coursera
- Undergraduate:** Fundamentals of Computing • Project Management • Modern Cryptology • Linear Algebra and ODEs
Real Analysis and Multivariable Calculus • Analytics in Transport and Telecom • Introduction to Economics
- Minors:** Control Systems in Electrical Engineering • Industrial and Management Engineering

OTHER PROJECTS

- Developed a MATLAB model to understand and illustrate the non-intuitive **Dzhanibekov Effect** based on the input. *2021*
- Developed a detailed CAD model of a mechanical wrist watch in Fusion360 and implemented automatic-winding. *2021*
- Implemented a **Photo OCR** system using image processing and machine learning in MATLAB. *2020*

EXTRA-CURRICULAR

- Built a **Remote Controlled Glider** in a team of 4 members in Aeromodelling Club workshop *2019*
- Participated in Rubik's Cube competition and Rubber powered glider competion in Takneek'19 *2019*
- Represented my school at **State Level Painting Competition**'13 conducted by Ministry of Power, Government of India *2013*