Sai Vedant

Fourth-Year Undergraduate, Electrical Engineering
Double Major in Economics
Indian Institute of Technology Kanpur

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Sai Vedant | SaiVedant26

Academic Qualifications *-present

Year	Degree/Certificate	Institute	Performance
2021-2026*	B.Tech. (Electrical Engineering & Economics)	Indian Institute of Technology Kanpur	**8.6**/10
2021	CBSE (XII)	Yogiraj Public School, Kota	92%
2019	ICSE (X)	St. Paul's School, Rourkela	98%

Academic Achievements

- Secured All India Rank **1010 in the Joint Entrance Examination (JEE) - Advanced** among 200,000+ candidates. *(2021)*
- Secured All India Rank **1568 in the Joint Entrance Examination (JEE) - Main** among 1,000,000+ candidates. *(2021)*
- Received the **KVPY Fellowship** with an **All-India Rank 587** (SA - Class 11) and **All-India Rank** 1078 (SX - Class 12). *(2020,2021)*
- Qualified Stage-2 of National Talent Search Examination**(NTSE)** and received the NTSE Scholarship. *(2019)*
- Qualified National Junior Science Olympiad **(NSEJS)** and appeared INJSO. *(2018)*

Professional Experience

Research Intern for Control System Design | *Distributed Systems and Control Lab* *Apr'23-Jul'23*

Prof. Soumya Ranjan Sahoo | *SURGE Program* Underwater_Glider

- Developed a CAD model in **Fusion360** for the underwater glider integrating functionalities to dive and adjust pitch by weight adjustment.
- Simulated underwater physics model of the glider using **MATLAB Simulink Multibody** for dynamic analysis and performance evaluation.
- Designed and tuned a **PID control system** for the Underwater Glider to attain a pitch in response to user inputs within limits of 60^0.

Web Development Intern | *VegFit* *Jun'23-Jul'23*

- Summer intern at VegFit, a personalized nutrition and training startup, designing Webpages and interactive elements in the LAMP Stack.
- Implemented a system of Geolocation and Reverse geocoding in JS for users in different countries to view prices in appropriate currency.

Key Projects

Statistical Analysis of Regression Models trained on the Financial Market | *Course Project* *Aug'23-Nov'23*

Prof. Abhinava Tripathi | *MBA737- Machine Learning for Financial Markets*

- Conducted in-depth statistical analysis of 4 regression models applied on **security price, stock indices, dividend and sentiment.**
- Tested the assumptions of Ordinary Least Squares by testing the Null of Statistical Tests- **Jarque-Bera,BP, Durbin Watson, VIF.**
- Compared the statistical significance of coefficients and performance metrics across each regression model and identified the best one.

SPICE and Verilog Modelling of Circuits | *Course Group Project* *Jan'23-May'23*

Prof. Rik Dey | *EE619- VLSI System Design* EE619

- Utilized **LTSPICE** for analysis of CMOS inverter:VTC characterization, current profile, rise/fall time evaluation for diverse configurations.
- Used **Icarus Verilog & gtkwave** for Structural and Behavioral modelling of **Multiplexers, JK-Flip Flops and synchronous counters.**
- Applied gate sizing techniques to optimize delay in diverse combinatorial circuits, according to theoretical principles for best performance.

Machine Learning Methods to calibrate Thermistor using ESP32 | *Self Project* *Apr'24-Jul'24*

- Utilized Gradient Descent for polynomial curve fitting to determine coefficients of Steinhart-Hart law for the thermistor.
- Calibrated the Analog to Digital Convertor of ESP-32 for accurate room temperature measurement.

Technical Skills and Relevant Coursework *-A Grade

Programming Languages	C | C++ | Python | Verilog HDL | MATLAB | Javascript/Typescript
Libraries/Utilities	Numpy | Pandas | Matplotlib | ReactJS | Git | Bash
Tools/Softwares	KiCAD | ALTIUM | SPICE | Fusion360
Institute Courses	Introduction to Electrical Engineering*| Machine Learning for Financial Markets* | VLSI System Design | Data Structures and Algorithms | Control Systems | Probability and Statistics | Econometrics | Microeconomics | Macroeconomics | Linear Algebra and ODE

Positions of Responsibility

Team Member-Electrical Subdivision | **AUV,IITK** *Oct'22 - Aug'23*

- Undertook **ROS Programming** and MATLAB simulation of battery management for **Anahita- Autonomous Underwater Vehicle.**
- Used **KiCAD** to design a Buck Convertor **PCB** which limits input voltage of up to 24 Volts from the battery to 5 Volts for the AUV.