

# Sahaj Gaur

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## EDUCATION

|                |                                                                         |              |
|----------------|-------------------------------------------------------------------------|--------------|
| 2023 - Present | B.Tech (Computer Science Engineering) at <b>VIT University, Vellore</b> | (CGPA: 8.65) |
| 2021-2022      | Class 12th CBSE                                                         | (85.2%)      |
| 2019-2020      | Class 10th CBSE                                                         | (91.8%)      |

## SKILLS

|                            |                                                     |
|----------------------------|-----------------------------------------------------|
| <b>Languages</b>           | C++, Python, Java, C, JavaScript                    |
| <b>Numerical Computing</b> | NumPy, Pandas, scikit-learn, TensorFlow, Matplotlib |
| <b>Data Engineering</b>    | PostgreSQL, MongoDB, Redis                          |
| <b>Trading Libraries</b>   | Zipline, Backtrader, TA-Lib                         |
| <b>Backend</b>             | Node.js, Django, FastAPI                            |
| <b>Frontend</b>            | React.js, Next.js, HTML/CSS, Tailwind CSS           |
| <b>Infrastructure</b>      | Docker, AWS (EC2, S3), Git, GitHub                  |

## WORK EXPERIENCE

### Defence Research and Development Organisation (DRDO) – Summer Intern May 2025 – June 2025

- Research at SSPL, Delhi, on precision instrumentation and secure defense systems.
- Developed AI-enhanced atomic timekeeping algorithms; achieved 71% lower Allan deviation compared to KPW in a 30-day GPS-synced simulation.
- Contributed to system analysis and technical documentation with cross-functional teams.

### FitMapp – SDE Intern Nov 2024 – Feb 2025

- Led a backend team of 3 in designing robust system architecture that improved development efficiency and accelerated feature delivery.
- Built scalable backend services and integrated third-party APIs to expand core functionality.

## PROJECTS

### Real-Time Multi-Exchange Latency-Arbitrage Simulator

- Engineered a simulation platform in Python processing 500,000+ order book updates/sec across multiple exchanges, enabling realistic latency and execution modeling.
- Modeled price dislocations and probabilistic fills to evaluate arbitrage strategies over 10,000+ simulated trades, improving backtest fidelity.
- Developed an interactive dashboard to visualize real-time order book dynamics and strategy performance, enhancing analysis efficiency by 40

### GAN-Powered Option Valuation Engine

- Designed a hybrid GAN-CNN architecture that improved equity option prediction accuracy by 18% over baseline models.
- Generated 50,000+ synthetic samples to augment sparse market data and boost model generalization.
- Delivered a real-time valuation tool supporting high-volatility trading scenarios with enhanced reliability.

## LEADERSHIP EXPERIENCE

### The AI and ML Club (TAM), VIT Vellore (Web Development Head) Aug 2024 – Present

- Led system design and development of the club website, managing a team of 10 and supporting 5,000+ users during **Gravitas 2024**.
- Drove initiatives that increased club participation by over 400% within one year.
- Delivered technical workshops, including an 8-hour AI session at **Data Alchemy 2.0**.