Madhav Dogra

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EDUCATION

Institute	Degree / Exam	Year	Percentage/CGPA
Vellore Institute of Technology, Vellore	B.Tech in Computer Science	2023 – 2027	9.25
Delhi Public School R.K. Puram, New Delhi	Senior Secondary (Class XII)	2023	90.4%
Delhi Public School R.K. Puram, New Delhi	Secondary (Class X)	2021	96.4%

EXPERIENCE

- **Software Engineer Intern, LilySys** **May 2025 – July 2025**
  - Built a middleware to connect Acoem Sensors with MPPCB (Madhya Pradesh Pollution Control Board), automating data extraction, SQL table creation, and transmission in a standardized, processable format.
  - Developed a Vendor Management System with a clean and responsive UI, optimized for operational efficiency and seamless vendor lifecycle tracking.
- **Independent Research Project** **July 2025 – Present**
  Working under the supervision of Dr. Bhawana Tyagi (Assistant Professor Sr. Grade 1, VIT, Vellore) on a research paper proposing a novel cloud load balancing algorithm using a statistical approach to optimize system performance and resource allocation.

PROJECTS

- **Mathematics Resources** [Details]
  Driven by a deep love for mathematics and the belief that education should be free and accessible, I created and published open-source mathematical resources for learners and educators.
- **Recursive Market Intelligence (RMI-MMGM)** [Details]
  Developed a modular system for financial prediction using geometric modeling. It integrates social and financial data to generate dynamic surface-based market forecasts. Still under development.
- **PolarCrypt: A Novel Post-Quantum Security Standard** [Details]
  Proposed a cryptographic technique leveraging polar planes to ensure security against quantum attacks. Designed new primitives resistant to post-quantum threats.

SKILLS

- **Programming Languages**: Python, Java, C, C++, Go, Swift, JavaScript, TypeScript, HTML, CSS, LaTeX
- **Frameworks**: SwiftUI, React, Next.js, Node.js (Basic)
- **Mathematical/AI Tools**: MATLAB, R (Language), NumPy, SciPy, TensorFlow, PyTorch, Transformers
- **Databases**: Supabase, MySQL, SQL Plus, NoSQL
- **Tools & Methodologies**: Problem Solving, Data Analysis, JetBrains IDEs
- **Languages**: English (Native), Hindi (Native), French (Basic)

AWARDS

- **First Place, Stat-a-thon (2025)**
  Led the team and was awarded first place for proposing and partially implementing a novel hybrid neural architecture for stock market trend prediction. Our model, TKLA, combined Kolmogorov-Arnold Networks, multi-scale LSTMs, hierarchical attention, and option-specific features.
- **First Place, IEEE Hack-Battle (2025)**
  Led the team and won first place for creating a game interconnected with human blinking patterns, showcasing innovative human-computer interaction design.

CERTIFICATIONS

- **Oracle Cloud Database Services Professional**
  Skilled in deploying, managing, and monitoring Oracle Cloud databases.
- **Oracle Cloud Infrastructure, Generative AI Professional**
  Proficient in using Oracles generative AI services for model development and fine-tuning.
- **Oracle Cloud Infrastructure, AI Foundations Associate**
  Certified in core AI concepts, model training, and OCI-based deployments.
- **Oracle Analytics Cloud 2025 Certified Professional**
  Skilled in implementing Oracle Analytics Cloud, building dimensional models, creating visualizations, and leveraging advanced analytics and ML features.
- **NVIDIA: Introduction to Transformer-Based Natural Language Processing**
  Learned transformer architecture fundamentals and attention mechanisms with practical training in NLP model development.