

Derrick Richard

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EDUCATION

- **Vellore Institute of Technology**, Chennai, India June 2023 – Present (2027)
Bachelor of Technology in Computer Science
CGPA: 9.87 / 10
Relevant Courses: Data Structures and Algorithms, Operating Systems, Compiler Design, Computer Networks, Differential Equations, Statistical Analysis, Complex Variables
- **Indian Institute of Technology Madras**, Chennai, India June 2023 – Present (2026)
Bachelor of Science in Data Science
CGPA: 9.06 / 10
Relevant Courses: Theoretical Foundations of Machine Learning, Machine Learning in Action: Model Development and Optimisation, Web and App Development, Business Analytics, Linux System Commands
- **St. John's English School and Junior College, Besant Nagar**, Chennai, India June 2021 – May 2023
All India Senior School Certificate Examination: 96.6% with Distinction
- **St. John's English School and Junior College, Besant Nagar**, Chennai, India June 2009 – May 2021
All India Secondary School Examination: 91.2% with Distinction

SKILLS

Languages: Python, R, C, C++, Java, JavaScript, HTML, CSS, Matlab, Assembly (8051, 8086, ARM), TypeScript, Dart, Bash Script, SQL

Frameworks & Libraries: React.js, Vue.js, Flask, Express.js, Node.js, FastAPI, Bootstrap, TailwindCSS, Chart.js, Socket.io, Streamlit, Three.js, Vite, Electron.js, Flutter, LibGDX, JWT, React Router, React Hook Form, Axios, NPM

Domains: Machine Learning, Deep Learning, Computer Vision, Image Processing, Data Structures & Algorithms, Optimisation, Multithreading, Distributed Computing, Cloud Computing, Full Stack Development

Systems & Tools: Linux, Git, GitHub, GitHub Actions, Docker, MongoDB, Firebase, Supabase, Redis, Google Cloud, Netlify, Vercel, Celery, Selenium, ESLint, Prettier, Postman, Database Management, CISC, RISC

Data & Visualisation: Power BI, Tableau, Pandas, NumPy, Matplotlib, Scikit-learn, SciPy, TensorFlow, PyTorch, Keras, OpenCV

Design Tools: Figma, Canva, LaTeX, Markdown

EXPERIENCE

- **Google Summer of Code (GSoC)** Remote
Extending TorchVision Support in R for Computer Vision Tasks June - September 2025
Contributing to the R Project by implementing core computer vision datasets, adding models like Faster R-CNN, Mask R-CNN, FCN, and quantised ResNet, and improving GPU support and API consistency in the TorchVision R interface. Focused on building scalable, modular, and production-ready vision pipelines in R.
- **Biomedical Engineer Research Intern** Remote
Early Detection of DMD and DCM Disorders – JSS Medical College with VIT Chennai April – September 2025
Conducted deep analysis of genomic and clinical datasets to identify key biomarkers associated with Duchenne Muscular Dystrophy (DMD) and Dilated Cardiomyopathy (DCM) in children. Designed and implemented machine learning and deep learning models to enable early-stage diagnosis, aiming to support clinical decision-making through scalable bioinformatics-driven solutions.

PROJECTS

- **FlowSpeak - Speech Therapy Assistant:**
Developed a comprehensive mobile application and intelligent therapy bot to support individuals who stutter. Integrated advanced speech analysis algorithms, progress tracking features, and personalised therapy recommendations. Won 1st place at IIITDM Kancheepuram for an innovative approach to assistive technology.
- **FinFlow - Finance Tracking & Budget Management:**
A feature-rich full-stack finance tracker built using the MERN stack and optimised for desktop-first experiences. Enables users to manage expenses, track budgets, and visualise financial data through an intuitive and dynamic dashboard. Enhanced with custom animations, real-time data updates, and an AI-powered chatbot for personalised financial insights.

- **Zephyraxis - Multiplayer Game System:**

Created an advanced network-based multiplayer game using WebSockets and real-time synchronisation protocols. Implemented robust client-server architecture for seamless player interactions, featuring real-time state management, collision detection, and optimised network communication.

- **Breaking Bonds - Bail Reckoner & Legal AI Assistant:**

Developed an intelligent web application using the MERN stack to automate the bail application process. Implemented an AI-powered case suggestion system for legal precedence analysis and integrated a comprehensive lawyer recommendation system. Ranked Top 25 in Smart India Hackathon among thousands of teams nationwide.

- **Genome Classification for Muscular Disorders:**

Designed a comprehensive machine learning pipeline to classify genetic sequences related to Duchenne Muscular Dystrophy (DMD) and Dilated Cardiomyopathy (DCM), leveraging deep sequence embeddings and ensemble models. Achieved high accuracy in identifying genetic markers for early disease detection.

- **Quiz Master - Automated Quiz Application:**

Built a full-stack quiz management system using Flask (backend) and Vue 3 + Vite (frontend). Leveraged Celery and Redis for asynchronous task processing, caching, and message brokering to enable real-time updates. Supports user registration, admin dashboards for content management, and automated quiz scoring.

LEADERSHIP

- **Chairperson** – IEEE RAS, VIT Chennai
- **Student Council Member** – VIT Chennai
- **Ex-President** – Sophrosyne Toastmasters, VIT Chennai
- **Programme Representative of CSE Core** – VIT Chennai
- **Captain** – VIT Tennis Team
- **Overall Coordinator** – TechnoVIT Fest

ACHIEVEMENTS

- **Two-time Rank 1 – Meritorious Award**, VIT Chennai - Awarded for securing the highest academic standing in the university.
- **1st Place – LogicLoom 2.0 & DSA Triathlon**, IIT Madras - Won LogicLoom for building an ML model to distinguish AI-generated from human-written text; DSA Triathlon featured three rounds of intense algorithmic challenges.
- **Top 25 – Bail Reckoner**, Smart India Hackathon - Developed a legal AI assistant to help users understand bail eligibility; ranked among the top 25 teams nationwide.
- **Winner – EncryptID**, IIT Madras - Solved multi-layered encryption and cryptic clue challenges using cybersecurity tools and logical reasoning.
- **Winner – Vashisht 2.0**, IIITDM Kancheepuram - Developed a mobile app and an intelligent therapy bot to support individuals who stutter, integrating speech analysis and tracking features.
- **1st Place – AI Analytics**, IIITDM Kancheepuram - Analysed real-life financial transaction data to detect and predict fraud using machine learning techniques.
- **Best Outgoing Student**, St. John's English School - Conferred for overall excellence in academics, leadership, and extracurricular contributions.
- **Perfect 10/10 CGPA**, VIT Chennai - Maintained a flawless academic record with distinction in all university courses.
- **Physics & Chemistry Subject Topper**, St. John's English School - Secured the highest scores in both Physics and Chemistry at the school level.
- **Topper Badge (13 times)**, IIT Madras BS Degree Program - Consistently ranked among the top scorers in individual course modules in Data Science.
- **Topper – NPTEL Financial Mathematics**, NPTEL - Ranked among the top 1% in a national-level certified course on financial modelling and mathematics.
- **Competitive Programming Achievements:** Achieved a peak **global rank of 340** on CodeChef through regular participation in rated contests, and earned **Gold** badges in **Python** and **C++**, as well as a **Silver** badge in **C** on HackerRank for demonstrated coding proficiency and problem-solving skills.