Vivek Kumar

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GitHub: github.com/vickvey   LinkedIn: linkedin.com/in/vickvey
Portfolio: vickvey.github.io

Education

B.S. in Computer Science and Engineering (B.Tech Equivalent) — 2022 – Present
Indian Institute of Science Education and Research Bhopal — CGPA: **8.52/10**

- O Grade: Machine Learning with Graphs, Data Structures and Algorithms
- A Grade: Modern Cryptography, Advanced NLP, Competitive Programming, DBMS

Personal Projects

Modern TABASCO — Web-Based NLP Toolkit
github.com/vickvey/modern-tabasco

- Re-engineered an academic NLP research tool into a production-ready web application.
- Designed FastAPI services for scalable word-sense ambiguity analysis.
- Built a Next.js + React interface to visualize contextual ambiguities.

Investflow — Stock Analysis & Portfolio Optimization Platform
Frontend   Backend

- Developed a full-stack platform for stock analytics using Modern Portfolio Theory.
- Implemented FastAPI backends for financial data ingestion and optimization.
- Visualized portfolio risk-return trade-offs with interactive charts.

Personify — Personal Finance Management App
github.com/vickvey/personal-finance-manager

- Built a full-stack app for income, expense, and budget tracking.
- Implemented secure authentication and session management.
- Designed a strict TypeScript-first schema using Drizzle ORM and SQLite.

Experience

Software Engineer & NLP Research Intern — May 2025 – July 2025
Dr. Arpit Sharma's NLP Research Lab, IISER Bhopal

- Converted the TABASCO research toolkit into a scalable web application.
- Worked on intra-domain contextualization and word-sense ambiguity detection.
- Built FastAPI APIs and researcher-facing visualization tools.

Machine Learning Research Intern — May 2024 – July 2024
SIRL Lab, IISER Bhopal

- Built ML pipelines to predict anxiety from PPG signals.
- Performed signal preprocessing and feature extraction using NeuroKit.
- Identified diastolic spike patterns correlated with anxiety states.

Technical Skills

Languages: TypeScript, JavaScript, Python, C, C++
Frameworks: Next.js, FastAPI
Libraries: React, Express, NLTK, C++ STL
Databases: MongoDB, PostgreSQL, MySQL, SQLite
Tools: Git, GitHub, Node.js, Drizzle ORM, Zod
Interests: Web Development, Natural Language Processing

Positions of Responsibility

Coordinator — Cyberheathens (Programming Club), IISER Bhopal — Mar 2024 – Mar 2025

- Organized college-level competitive programming and problem-solving contests.
- Led a UI/UX and system design focused design contest.