Vansh Agarwal

vanshagarwal11@gmail.com

+91-9571924777

Codeforces Expert (1691, max 1967) 🔗

Website   Github   Linkedin

EDUCATION & COURSEWORK

- **Indian Institute of Technology**   Jodhpur, IN
  BTech in Artificial Intelligence & Data Science   *Aug 2021 – July 2025*
  Data Structures & Algo. (**A grade**) — Probability, Statistics (**A-**) — Pattern Recognition & ML etc.

EXPERIENCE

- **J.P. Morgan & Chase**
  Software & Data Engineer Intern   *Aug 2024 – Oct 2024*
  - Established an **Apache Airflow data orchestration pipeline** on streaming stock price data using **Apache Kafka & Spark jobs**, warehoused to **PostgreSQL, boosting automation by 30%.**
  - Developed trader's data visualization dashboard, Contributed to their tool **Perspective, enhancing it by 40%.**

- **Google Summer of Code - NumFocus**
  Open Source Developer   *May 2024 – Aug 2024*
  - Achieved **NetworkX parallelization** by integrating NetworkX's and **joblib**'s configuration systems into **nx-parallel**, implementing custom chunking strategies, and **adding 15 parallel graph algorithms.**
  - Migrated the build from hatchling to setuptools, set up **asv benchmarks** to analyze chunking effects on speedup.

- **Scaler**   *March 2023 – Aug 2023*
  - Supported the lucrative flow of DSA & System Design course with problem/test-case framing & doubt sessions.

PROJECTS

- **COSMOS** 🎧   *C++, Compiler Dev*
  - Designed an **Abstract Syntax Tree interpreter** for a dynamically typed scripting language, leveraging **Garbage Collection** with **Mark & Sweep algorithm**.

- **Verve** 🎧   *MERN, Prisma, GraphQL, NGINX*
  - A **website builder SaaS** app, suporting **Clerk Auth**, **drag-n-drop** website builder workspaces, **Kanban boards**, anayltics dashboard & **Stripe payment integration**, ensuring **99.9% uptime**

- **ScrapeFlow** 🎧   *ReactJs, Springboot, Docker, Cron*
  - **No-code Web Scraping SaaS tool**, with **pipeline scheduling**, enhancing data scraping experience by **80%.**

- **OdourGNN** 🎧   *Python, Pytorch, GNN*
  - Fabricated an ML pipeline for predicting molecular smell using **Graph Isomorphism Network**, reaching **96% accuracy** & drew causal reasoning with **conditional entropy / mean field variational approximation.**

- **SmartSchedule** 🎧   *Python, Genetic Algorithms*
  - Developed a university class scheduler with **Cuckoo Search Optimization**, **Lévy Flight strategy** & (**NSGA II**), with fitness **reaching 98% in just 55 generations (15sec)** for a 27 classes vs 2 rooms input.

- **KubeAssis** 🎧   *Golang, K8s*
  - Engineered an **OpenAI**-powered command line plugin in **Golang** to generate and apply **Kubernetes** manifests, enhancing **developer experience by 80%.**

SKILLS

- **Programming**: Python, Shell, C/C++, JavaScript/TypeScript, Golang, OOPs
- **Development**: MERN, Springboot, Tailwind, NextJs, GraphQL, Redux
- **Data Engineering**: Selenium, MongoDB, Neo4j, PostgreSQL, AWS, Kafka, Spark, Redis, Airflow
- **DevOps**: Docker, Git/Github, Kubernetes, Jenkins, Terraform, NGINX
- **Machine Learning**: Pytorch, SKLearn, MLOps, Computer Vision, Reinforcement Learning
- **Others**: System Design, Blender, Kali Linux, Quantum Computing, Figma, Quantitative Finance