PARAS BANSAL

🌐 Portfolio | ✉ parasb736@gmail.com | 📞 +91-7889099620 | 💼 LinkedIn | Github

Education

Indian Institute of Information Technology, Allahabad	**Aug 2024 − 2028**
B.Tech in Information Technology; CGPA: 8.89	*Prayagraj, Uttar Pradesh*
Golden Earth Global School, Sangrur	**Apr 2023 − Mar 2024**
Class 12 (CBSE); Percentage: 94.6%	*Sangrur, Punjab*
Golden Earth Global School, Sangrur	**Apr 2021 − Mar 2022**
Class 10 (CBSE); Percentage: 97%	*Sangrur, Punjab*

Technical Experience

Full Stack Developer | *Samadhaan (Project)* 💻   **June 2025 − Aug 2025**

- Engineered a scalable **MERN stack** platform to digitize public grievance reporting, handling **12+ categories** of civic issues.
- Developed a responsive **React.js** frontend with Tailwind CSS, reducing page load time by **25%** and enabling live tracking.
- Architected a secure **Node.js/Express** backend with 15+ RESTful APIs, implementing **JWT authentication** for 3 user roles.
- Leveraged **MongoDB** indexing to manage **100s of scalable records**, optimizing query performance for admin dashboards.

Algorithm Engineer | *Energy-Aware Beam-ACO Routing* 💻   **Oct 2025 − Dec 2025**

- Devised a custom **C++** optimization algorithm combining Ant Colony Optimization (ACO) and Beam Search.
- Embedded **Beam Search** (top-K pruning) to focus exploration, improving algorithmic convergence speed by approximately **40%**.
- Formulated a physics-based cost function incorporating drag and velocity, achieving **15% higher energy efficiency**.
- Structured a modular object-oriented engine in **C++ (STL)**, ensuring clean separation of graph modeling and heuristic logic.

Backend Lead | *Uni-Trade (Project)* 💻   **Sept 2025 − Dec 2025**

- Deployed a full-stack campus marketplace for **2,000+ students**, facilitating the exchange of **300+ academic items**.
- Streamlined product discovery by integrating a **MySQL** database with a 5-category filtering system, reducing lookup time by **60%**.
- Enforced strict security protocols using **Regex-based email validation** to ensure 100% student-only access and eliminate spam.
- Strategized the system architecture to support future scaling for real-time **WebSockets** chat and AI-driven price suggestions.

Technical Skills

Languages: C++ (STL), C, Java, JavaScript (ES6+), Python, HTML5, CSS3, SQL
Frameworks/Libs: React.js, Node.js, Express.js, Tailwind CSS, NumPy, Pandas, Bootstrap
Tools/Platforms: Git, Github, Linux, VS Code, MongoDB, MySQL, Postman, Vercel
Coursework: Data Structures & Algorithms (DSA), Object-Oriented Programming (OOP), DBMS, Operating Systems

Coding Profiles

CodeChef (**3 Star**, 1664) ↗ | Codeforces (**Expert**, 1710) ↗

Achievements

- Expert on Codeforces with a maximum rating of **1710**; ranked **830** among **91,904+** active Indian users and in the **top 5% globally**, with a best contest rank of **451** in Codeforces Round 1066 (Div. 1 & 2).
- Secured global ranks of **181** in CodeChef Starters 202 and **202** in CodeChef Starters 212, competing against thousands of participants worldwide.
- Solved **500+** algorithmic problems across Data Structures, Graphs, Dynamic Programming, and Trees on Codeforces, CodeChef, and LeetCode.
- JEE Main 2024: **AIR 3341** (**top 0.2%** among 1.4 million candidates); JEE Advanced 2024: **AIR 9232**.

Leadership & Volunteering

Student Mentor | *Prayaas (Social Service)*   **2024 − Present**

- Collaborated with a team to mentor **100+ underprivileged students**, creating resources rated 'Excellent' by 90% of attendees.

Head Boy | *Golden Earth Global School*   **Class 10**

- Led a student **council of 35 members** to organize 10+ large-scale school events, enhancing school-wide communication.