# Aviroop Mitra

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## PROFESSIONAL EXPERIENCE

**Neurologic-ai | Machine Learning Intern** *Nov, 2023 – Jul, 2025*

> Intelligent Claim Orchestration in Guideware | Skan AI *May – Jun, 2025*
>
> Automated claim creation and assignment in ***Guidewire ClaimCenter*** with a vision-to-reasoning pipeline that pairs ***GPT-4 Vision/Text*** (async ***Python***, prompt-engineered with token-cost guardrails) and a hierarchical scorer operating on a ***30-event window***. Delivered ***80%*** confidence (+***23 pts*** over benchmark) and ***halved inference latency***.

> Document Intelligence Platform | Carelon Health *Mar – May, 2025*
>
> ***Streamlit***-based interface drives a ***PDF-to-image*** flow where a ***layout-transformer*** isolates semantic zones; cropped sections are passed to async ***GPT-4 Vision*** (backed by ***Mistral OCR*** and ***Python imaging***) and rendered with ***Pandas***. The generalized architecture now ingests diverse healthcare documents and keeps end-to-end latency under ***3s*** without sacrificing accuracy.

**PwC India | Advisory Intern** *Jun – Jul, 2024*

> Full-Stack Ticket Platform *Jun – Jul, 2024*
>
> ***Angular*** + ***Spring Boot*** + ***MongoDB*** stack with ***JWT***-secured role-based access. Provides a real-time ticket dashboard, template creation/search, appraisal & query threads, and an animated UI—while keeping CRUD latency under ***50 ms***. An ***API Gateway*** and ***client-side service discovery*** route traffic to horizontally duplicated ticket and auth services for effortless scale-out.

## EDUCATION

**Indian Institute of Science (IISc) | Master of Technology - MTech in Computer science and engineering** *Aug, 2025 – Jul, 2027*

**Jadavpur University | Bachelor of Engineering - BE (Hons.) in Computer Science and Engineering |** *GPA: 8.25 (76.3%)* *Dec, 2021 – Jul, 2025*

**Burdwan Municipal High School | Higher Secondary in Science |** *GPA: O (93.4%)* *Jul, 2019 – Mar, 2021*

## PROJECTS

**CVPipeline** | GitHub *Jul, 2024 – Jul, 2025*

- Developed a six-step pipeline using ***LinkedIn API***, ***OpenAI API***, and ***Playwright*** to fetch, transform, AI-enhance, validate URLs, and generate HTML/PDF resumes.
- Implemented async ***HTTPx*** URL validation with multi-layer discovery (***Google KG → LinkedIn →*** profile) and 24-hour TTL ***SQLite*** cache to validate ***100%*** of links.
- Integrated ***OpenAI API*** for AI-powered skill filtering, experience extraction, and technical highlighting to optimize resume content.
- Built ***Playwright***-based ***PDF*** and ***HTML*** generators with centralized ***Python*** config for fonts, colors, and layout to ensure consistent styling.

**VARC_APP** | GitHub *Apr, 2025*

- Developed a ***Streamlit*** app with ***Python web-scraping*** modules to select a daily random article from The Hindu or The Telegraph.
- Engineered a topic-based distribution of ***50%*** Science, ***20%*** Business and economics, ***20%*** Art and literary criticism, and ***10%*** Philosophy and sociology.
- Structured the project into modular components: ***app/components*** for UI, ***scrapers*** for source-specific parse modules, ***utils*** for helpers, and ***main.py*** for the ***Streamlit*** entry point.
- Managed dependencies via ***requirements.txt*** and enabled one-step deployment using '***streamlit run app/main.py***'.

**distributed-p2p-network** | GitHub *Mar, 2025*

- Implemented ***distributed text processing*** in ***Python 3.8+*** across ***5 main nodes*** managing ***coordination***, ***load balancing***, and ***health monitoring*** on ***ports 8000–8999***.
- Developed chunk-based storage layer with ***10 data nodes*** handling replication, persistence, and storage distribution on ports ***9000–9999***.
- Configured ***10*** compute nodes for text chunking, embedding generation, and semantic search using ***Python*** and ***vector search*** on ports ***10***000–***10***999.
- Automated deployment and testing with ***virtual environments*** and ***scripts*** to ***initialize DB***, ***start all nodes***, and run ***unit, integration, and frontend tests*** generating ***coverage reports***.

## SKILLS

**Programming Languages:** Python, C++, JavaScript, Java, C, SQL

**AI & Machine Learning:** OpenAI API, Natural Language Processing (NLP), Convolutional Neural Networks (CNN), Transformers, Deep Learning, Scikit-Learn

**Databases & Data Storage:** MySQL, MongoDB

**APIs & Libraries:** REST APIs, SQLAlchemy, Pandas (Software), NumPy, pytest, PIL

**Web Frameworks:** Node.js, FastAPI, Spring Boot, Angular, Streamlit

**Software Engineering:** Object-Oriented Programming (OOP), Graph Theory

## AWARDS & ACHIEVEMENTS

**GATE CS, 2025 |** *AIR 65, 99.96 percentile* *Feb, 2025*

**Senior Scholar | Jagadish Bose National Science Talent Search |** *98.98 percentile* *Jul, 2022*

**Junior Scholar | Jagadish Bose National Science Talent Search |** *98.5 percentile* *Mar, 2020*