# 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 – Aug, 2025*

- Implemented a **6-step** modular pipeline using **LinkedIn API**, **OpenAI API**, **Google Knowledge Graph**, **PyGithub**, and **Playwright** to fetch profiles, enhance content, validate URLs, and output HTML and PDF resumes.
- Enabled async processing across **6 modules** using **httpx**, **requests**, and **python-dotenv** to perform concurrent API calls and secure credential management.
- Integrated **SQLite-based caching** with a **24-hour TTL** for **LinkedIn**, **Google Knowledge Graph**, and **job search API** responses across the **6-step pipeline** to prevent redundant calls and improve efficiency.

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

- Implemented a **Streamlit** application in **Python** with **scrapers** for The Hindu and The Telegraph.
- Developed **web-scraping** modules under scrapers/, **UI components** under components/, and **utility functions** under utils/ for clean **modular architecture**.
- Configured daily article selection with topic-based probability distribution: Business and economics **20%**, Science and technology **50%**, Art critique **20%**, Philosophy and sociology **10%**.
- Ensured consistent daily output by **caching** articles in data/ and managing dependencies via **requirements.txt**.

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

- Developed a distributed text processing system in **Python** 3.8 with **5 Main Nodes** (port 8000-8999), **10 Data Nodes** (port 9000-9999), and **10 Compute Nodes** (port 10000-10999) for coordination, storage, replication, embedding generation, and semantic search.
- Implemented **chunk-based storage** and **data persistence** with **built-in replication** for high availability and managed **real-time embedding similarity operations**.
- Managed load balancing, health monitoring, and system-wide orchestration with a **Python**-driven frontend on port 8501 and **FastAPI** docs at port 8000/docs.

## SKILLS

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

**Artificial Intelligence & Machine Learning:** Machine Learning, Deep Learning, Natural Language Processing (NLP), Convolutional Neural Networks (CNN), Transformers, Recommender Systems

**Frameworks & Libraries:** Pandas (Software), NumPy, Scikit-Learn, FastAPI, Node.js, Jupyter

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

**DevOps & Cloud:** API Gateways, Cloud Computing, Git

**APIs & Microservices:** OpenAI API, REST APIs

## 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*