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

Jadavpur University | **Bachelor of Engineering - BE (Hons.) in Computer Science and Engineering** | *GPA: 8.25*   *Dec, 2021 – Jul, 2025*
Burdwan Municipal High School | **Higher Secondary in Science** | *GPA: O*   *Jul, 2019 – Mar, 2021*
Burdwan Town School | **Secondary** | *GPA: AA*   *Jan, 2011 – Mar, 2019*

PROJECTS

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

- Implemented a 6-step modular pipeline in ***Python*** with ***linkedin-api***, ***OpenAI***, ***httpx***, and ***Playwright*** for LinkedIn data fetching, AI enhancement, URL validation, HTML generation, and PDF conversion.
- Enhanced resume with ***OpenAI*** processing filtering **47** skills, extracting **2** projects, and highlighting **5** tech metrics via async ***OpenAI***_processor.py.
- Validated and bulk-processed **5 URLs** concurrently with ***url_validator.py*** using ***httpx*** limiting to **10 concurrent requests**, integrated with ***entity_search Google KG*** lookups.
- Generated responsive ***HTML*** with configurable styling via ***HTML***_generator.py and PDF via ***pdf_generator.py*** using ***Playwright*** in a **62-second** end-to-end runtime.

VARC_APP | GitHub   *Apr, 2025*

- Developed a ***Streamlit*** application in ***Python*** with ***web scraping*** modules in app/components that selects one article per day using topic probabilities (Business **20%**, Science/Tech **50%**, Art critique **20%**, Philosophy **10%**).
- Implemented modular scrapers in app/scrapers to fetch from ***two sources*** (The Hindu, The Telegraph) and cache daily articles in data for offline presentation.
- Organized ***four modules*** (***app/components***, ***app/scrapers***, ***app/utils***, ***data***) with dependency management via ***requirements.txt*** and a single ***pip install*** command to support the main ***Streamlit*** script.

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

- Architected a ***Python 3.8***+ distributed system with **5 coordination nodes** (ports 8000–8999), **10 data nodes** (9000–9999), and **10 compute nodes** (10000–10999).
- Developed ***virtualenv***-based deployment scripts for node initialization, database setup, and frontend startup (port 8501), managing over **25 nodes** in real time.
- Implemented ***chunk-based storage*** with ***data replication*** across **10 data nodes** and ***semantic search*** via compute nodes for ***embeddings***.
- Leveraged ***health monitoring***, ***load balancing***, and ***modular app/api***, ***app/services***, and ***scripts*** with full unit, integration, and frontend ***test coverage***.

SKILLS

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

Machine Learning & AI: Machine Learning, Deep Learning, Natural Language Processing (NLP), Large Language Models (LLM), Transformers, Convolutional Neural Networks (CNN)

APIs & Libraries: OpenAI API, SQLAlchemy, Pandas (Software), NumPy, Scikit-Learn, pytest

Frameworks & Tools: FastAPI, Spring Boot, Angular, Node.js, Jupyter, Git

Databases & Data Storage: MySQL, MongoDB, SQL

Computer Science Fundamentals: Graph Theory, Object-Oriented Programming (OOP)

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*