

Career Summary

Results-driven **Data Scientist** with **2 years of experience** in developing **scalable backend systems**, **machine learning models**, and leveraging **AWS cloud solutions**. Skilled in **Machine Learning (ML)**, **Deep Learning (DL)**, and **Natural Language Processing (NLP)**, with expertise in building and deploying **production-grade AI solutions**. Experienced in utilizing GPU clusters for high-performance **computing** and exploring applications of **Quantum Computing** in data science.

Professional Experience

ML Engineer | Software Engineer, Psiog Digital Ltd.**Jul 2022 - Aug 2023**

Covalent Compute Framework Development

- **Role:** Served as an ML Engineer and Backend Developer on Covalent, a unified compute framework to streamline AI and HPC workflows. Played a key role in enhancing the framework's functionality and scalability by developing backend solutions.
- **Interactive Workflow Visualization:** Enhanced debugging efficiency by developing an interactive directed-acyclic graph (DAG) modeling feature for ML workflows. Reduced debugging time by 90%, improving team productivity and workflow traceability.
- **Dynamic GPU Resource Allocation:** Designed APIs to enable on-demand GPU resource management, optimizing computational performance and minimizing idle costs in high-compute environments.
- **Streamlined ML Deployment:** Built FastAPI-based APIs for one-click deployment of ML app endpoints via the Covalent Cloud Server, reducing deployment time from 1 hour to 5 minutes, significantly improving development agility.
- **AWS Integration for Pipeline Support:** Worked with AWS services (EC2, S3, Lambda, RDS, CloudWatch) to support deployment pipelines, monitor performance, and resolve critical issues, ensuring system stability and seamless operations.
- **Cross-functional Collaboration and Communication:** Acted as a key liaison between internal teams and clients, ensuring clear communication of critical issues and aligning technical solutions with business objectives to maximize impact.

ML Intern, Psiog Digital Ltd.**Feb 2022 - Jul 2022**

- **Role:** As an intern at Psiog Digital Ltd., I gained hands-on experience across backend, machine learning, and frontend development, taking on diverse tasks and delivering impactful solutions that contributed to team efficiency and system performance.
- **Backend & API Optimization:** Migrated 10+ Flask APIs to FastAPI, improving performance and code structure, reducing response time by 10x (from 200ms to 20ms), and enhancing system efficiency.
- **Frontend Debugging & Optimization:** Collaborated with the frontend team to debug and optimize React-based applications, reducing page load time by 20% and improving Lighthouse scores, boosting user experience and accessibility.
- **Database Design & Query Optimization:** Assisted in designing optimized database schemas and writing SQL queries to support backend APIs, automating tasks and increasing efficiency by 30%.
- **Model Enhancement & Automation:** Fine-tuned ensemble models for regression and classification, using grid search CV, and feature engineering to improve accuracy by 15-20%.

Projects

- **Image Captioning:** Developed an image captioning model using deep learning, integrating InceptionV3 for image feature extraction and an LSTM-based network for text generation. Applied NLP techniques to enhance textual representation. Optimized training with bidirectional LSTMs, batch normalization, and dropout. Achieved a BLEU-4 score of 25 on the Flickr8k dataset.
- **Sales Forecasting for Inventory Management:** Built a Regression model to forecast sales for 200+ SKUs, enabling precise inventory planning. This reduced deadstock by 20%, and improved product availability.
- **Full Stack App Development:** Developed a Multi-User Library Management Application for librarians and other general users. Created aesthetic UI with Vue.js CLI. Protected Backend APIs with Flask, and JWT Security. SQLite for Database Management, Redis for caching, and Celery for backend jobs such as book return reminders, and auto revoke are Performed

Skills

- **Cloud:** AWS (EC2, S3, Lambda, RDS)
- **Database Management:** MongoDB, PostgreSQL, SQL
- **Backend Development:** FastAPI, Flask, Redis, Celery, Java, Shell Scripting
- **Frontend Development, Web Scraping:** JavaScript, React, Vue.js, Beautiful Soup, Selenium
- **Libraries:** Python (Pandas, NumPy, Matplotlib, Seaborn, Plotly, Scikit-learn, TensorFlow), Scipy
- **Specialization:** Advanced Machine Learning, NLP, Deep Learning (RNN, LSTM, BERT, Word2vec, GPT)
- **Mathematics Expertise:** Strong foundation in Linear algebra, Calculus, Probability, Statistical analysis
- **Operating System, Version Control, Project Management Tools:** Linux, Windows, Git, GitHub, Notion, Slack

Award / Achievements

- **Best Budding Star Award:** Awarded for making a significant impact early on, showcasing rapid growth, at PSIOG Annual Awards.
- **Blogging/Medium Articles:** Writes in-depth Data Science articles on Medium with over **4k followers**.
- **Hacktoberfest Accepted PRs:** Received Recognition and goodies for **3 Accepted PRs** to the Covalent Open Source Project.

Education

B.Sc in Data Science and Programming	Indian Institute of Technology, IIT Madras	Jan 2021 - Apr 2025
B.Tech in Mechanical Engineering	Sastra Deemed University	Jun 2018 - Jun 2022