Bernard Birendra Das

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Professional Summary

Results-driven software developer with a strong foundation in data science, full stack web development, and DevOps. Experienced in designing and deploying scalable, production-grade solutions using modern frameworks, cloud platforms, and MLOps/DevOps best practices. Adept at collaborating in cross-functional teams, leading feature delivery, and mentoring junior engineers. Passionate about building impactful products, automating workflows, and driving continuous improvement in fast-paced environments.

Awards and Certifications

Foundational C# with Microsoft Developer Certification *September 2023*
AWS Academy Graduate - AWS Academy Cloud Foundations *November 2022*

Technical Skills

Languages: Python, Postgres, MySQL, MS-SQL, R

Machine Learning / Deep Learning: Scikit-learn, TensorFlow, PyTorch, XGBoost, LightGBM, CatBoost, Hugging Face Transformers

Data Engineering: Apache Spark, dbt, Apache Airflow, Trino, Apache Iceberg, Apache Druid, Apache Kafka

MLOps: MLflow, Kubeflow, DVC, Prefect, Docker, Kubernetes, Git, GitHub Actions, CI/CD

Cloud & Infra: Kubernetes (on-prem & cloud), MinIO, OpenStack, HAProxy, Terraform, Ansible, Keycloak

Web Frameworks & APIs: FastAPI, Next.js, SvelteKit, Remix, Vite, Vue 3, Flask, .NET Core Web API

Visualization: Apache Superset, Metabase, Grafana, Plotly, Seaborn, Matplotlib, D3.js, Three.js

Search & Retrieval: Qdrant, Meilisearch

Other Skills: Data Modeling, Feature Engineering, A/B Testing, Experiment Tracking, Agile (Scrum/Kanban), SOLID, Design Patterns, API Development, Real-time Systems

Experience

Software Developer | *Simplify3x Software Private Limited* | **2 yrs 5 mos** *January 2023 – May 2025*

- Worked on the core product team of SimplifyQA product as a feature owner for PDF Reports and Pipeline Executions modules.
- Designed and implemented RESTful APIs and microservices in Node.js, significantly reducing service response times and improving overall system scalability.
- Developed dynamic, data-driven dashboards using Angular and D3.js, enabling real-time visualization of key performance metrics for business stakeholders.
- Collaborated with product owners, QA engineers, and DevOps to establish a CI/CD pipeline on Azure DevOps, cutting deployment times from hours to minutes.
- Mentored two junior developers through code reviews and pair-programming sessions, fostering best practices and accelerating feature delivery.

Education

CHRIST (Deemed to be University), Bangalore	**PhD in Data Science** | CGPA : N/A	*December 2024 – present*
CHRIST (Deemed to be University), Bangalore	**Master of Computer Applications (MCA)** | CGPA : 8.66	*June 2021 – June 2023*
St. Xavier's College (Autonomous), Kolkata	**Bachelor of Computer Science Honours** | CGPA : 7.20	*June 2018 – June 2021*
Auxilium Convent School, Barasat	**12th Grade, ISC Board** | CGPA : 7.12	*June 2016 – June 2018*
Auxilium Convent School, Barasat	**10th Grade, ICSE Board** | CGPA : 7.64	*June 2004 – June 2016*

Projects

Interactive Data Catalog | *Next.js, Apache Superset, Node.js* *2025*
- Built an interactive data catalog web application using Next.js for UI and integrated Apache Superset via embedded dashboards for dataset exploration.
- Developed Node.js microservices to retrieve metadata and execute SQL queries, enabling users to browse, filter, and preview datasets seamlessly.
- Implemented access controls and audit logging with Keycloak and PostgreSQL for secure data governance.

Swarm Simulation Visualization | *SvelteKit, Three.js, Python FastAPI* *2025*
- Designed a 3D WebGL-based UI with Three.js and SvelteKit to visualize real-time drone route optimizations from spatio-temporal datasets.
- Created FastAPI endpoints to stream simulation data and control parameters, enabling users to manipulate swarm behavior on-the-fly.
- Added performance metrics overlays and animation controls with integration to D3.js charts for detailed analysis.

MLOps Dashboard | *Next.js, MLflow, Docker, GitHub Actions* *2025*
- Developed a full-stack MLOps dashboard using Next.js that interfaces with MLflow's REST API to display experiment runs, metrics, and model versions.
- Containerized the dashboard with Docker and deployed via GitHub Actions on a Kubernetes cluster, enabling automated updates on new experiments.
- Integrated Prometheus for resource monitoring and set up alerts via Slack webhook for experiment failures.

End-to-End ML Pipeline with MLOps | *Kubernetes, MLflow, Airflow, Docker, FastAPI, Next.js, Grafana* *2024*
- Designed and deployed a scalable machine learning pipeline for tabular data, automating data ingestion, model training, and deployment using Airflow, MLflow, and Docker on a Kubernetes cluster.
- Implemented CI/CD for model retraining and versioning with GitHub Actions, automated monitoring, drift detection, and rollback via MLflow and Grafana dashboards.
- Built a Next.js frontend dashboard for real-time pipeline metrics and error tracking, integrating FastAPI endpoints for live inference.

LLM Fine-Tuning and Deployment | *Hugging Face Transformers, FastAPI, SvelteKit, Qdrant* *2024*
- Fine-tuned open-source LLMs (e.g., Llama 2, Falcon) on domain-specific datasets using Hugging Face Transformers and managed experiments with MLflow.
- Deployed inference microservices via FastAPI, orchestrated on Kubernetes, and served vector search through Qdrant for semantic retrieval.
- Developed a SvelteKit web app with interactive chat interface and integrated streaming responses for real-time user interactions.

Real-Time Data Analytics Platform | *Kafka, Spark, Apache Druid, Apache Superset, Remix* *2023*
- Engineered a real-time analytics platform for streaming financial data using Apache Kafka and Spark Structured Streaming.
- Automated ETL pipelines into Apache Druid for low-latency OLAP queries and built interactive Remix dashboards embedded via Superset for business insights.
- Set up alerting and performance monitoring using Grafana and Prometheus to ensure SLA compliance.

Computer Vision for Defect Detection | *PyTorch, OpenCV, TorchServe, Next.js* *2023*
- Built and deployed deep learning models for automated defect detection in manufacturing images (95%+ accuracy) using PyTorch and OpenCV preprocessing.
- Served models with TorchServe on Kubernetes, enabling scalable, low-latency inference.
- Created a Next.js frontend for image uploads and real-time bounding-box overlay visualization, using WebSockets for live updates.

Recommendation System at Scale | *Presto, TensorFlow, Flask, Vite + Vue 3* *2022*
- Designed a hybrid collaborative filtering and content-based recommendation engine on large-scale datasets using Presto and TensorFlow.
- Exposed recommendations via a Flask API, deployed on Docker and Kubernetes with experiment tracking in MLflow.
- Launched a Vite + Vue 3 web app showcasing dynamic product feeds and conducting A/B tests through feature flags.

Time Series Forecasting for Business | *Prophet, ARIMA, DVC, Grafana, Dot NET Core Web API* *2022*
- Implemented time series forecasting models (Prophet, ARIMA) for sales and demand prediction with versioning and reproducibility via DVC.
- Deployed forecasting services as a Dot NET Core Web API on Docker, enabling scheduled retraining.
- Visualized forecast outputs and scenario analyses in Grafana dashboards with interactive time sliders.

NLP Pipeline for Sentiment Analysis | *spaCy, NLTK, BERT, Meilisearch, Remix* *2021*
- Developed an end-to-end NLP pipeline leveraging spaCy, NLTK, and BERT embeddings for social media sentiment analysis.
- Indexed processed texts in Meilisearch for full-text search and built REST endpoints with FastAPI.
- Created a Remix-based frontend displaying sentiment trends and allowing custom query filters with real-time updates.