

Bruno Fonkeng

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LinkedIn: <https://www.linkedin.com/in/edgemindstudio> | **Portfolio:** <https://edgemindstudio.com>
| **YouTube:** <https://www.youtube.com/@edgemindstudio> | **GitHub:**
<https://github.com/edgemindstudio>

Objective

Aspiring Data Engineer and Machine Learning practitioner with strong expertise in ETL pipelines, data modeling, cloud computing, and real-time data processing and current Ph.D. student in Computer Science skilled in building secure, scalable, and production-ready data solutions integrating Python, SQL, AWS, and big data tools. Adept at collaborating across teams to transform raw data into actionable insights. Experienced in MLOps, API development, and integrating AI/ML workflows into business processes with hands-on experience in data pipelines, and probabilistic generative modeling and predictive modeling.

Education

University of North Dakota — Grand Forks, ND
Ph.D., Computer Science – ML/DL (Data Engineering emphasis) · *Expected May 2027*

- Research: Probabilistic generative models for high-fidelity synthetic data; production data/ML pipelines (Python, SQL, AWS).

University of North Dakota — Grand Forks, ND
M.S. in Computer Science (en route): Expected Dec 2025

University of Bamenda — Bambili, Bamenda
B.Sc. in Physics May 2020

Technical Skills

- Programming: Python, SQL, Bash, JavaScript, C++
- Data Engineering Tools: Apache Airflow, Apache Spark, Pandas, NumPy, dbt
- Databases: PostgreSQL, MySQL, MongoDB, AWS RDS
- Big Data & Streaming: Kafka, Spark Streaming, AWS Kinesis
- Cloud Platforms: AWS (S3, Lambda, EC2, RDS, Glue), GCP, Azure
- DevOps & MLOps: Docker, Kubernetes, GitHub Actions, MLflow, CI/CD

- Machine Learning: TensorFlow, PyTorch, Scikit-learn
 - Data & Visualization: Tableau, Power BI, Pandas, NumPy, Matplotlib
 - Version Control: Git, GitHub
 - Concepts: Predictive Modeling, Probabilistic Generative Modeling, API Integration, Model Evaluation
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Experience

Graduate Research Assistant – Lab of Innovations in Cybersecurity, Computer Networks, and Communication (ICCC)

University of North Dakota | Aug 2023 – Present

- Developed and deployed secure machine learning pipelines for research in cybersecurity and anomaly detection.
- Integrated **cloud-based ETL pipelines** to ingest, transform, and store terabytes of structured and unstructured data.
- Conducted **predictive modeling** and **real-time threat detection** experiments using deep learning models.
- Collaborated with cross-functional teams to optimize data workflows, improving processing efficiency by 35%.

Teaching Assistant

University of North Dakota | Aug 2023 – Present

- Assisted in teaching **Systems Programming** and **Computer & Network Security**, mentoring students in programming, network protocols, and security best practices.
- Created hands-on coding labs to help students understand **data flow**, **API development**, and **security in backend systems**.

Research Assistant – ROI Data Platform (TrueNorth partnered with John Deere)

University of North Dakota | Jan 2024 – May 2025

- Designed an **API-based data pooling system** to integrate agricultural equipment telemetry data into a centralized dashboard.
 - Developed an **ROI calculator** leveraging SQL queries and Python scripts for real-time profitability analysis.
 - Ensured **data integrity and security** using encrypted data transfers and compliance with corporate policies.
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Projects

Real-Time Fraud Detection API

[GitHub Repo](#) | July 2025 – August 2025

- Designed a **real-time fraud detection pipeline** using Python, FastAPI, and PostgreSQL.
- Integrated a **machine learning model** trained on transactional data to detect fraudulent patterns.
- Built an automated **ETL pipeline** to process and store transaction data for further analysis.
- Deployed on **Docker** with CI/CD workflows for continuous updates.

VotingSphere – Secure Multi-Platform Voting System

Jan 2025 – Present

- Engineered backend with **Django REST Framework** and JWT authentication.
- Integrated **Flutter** frontend for Android, iOS, and Web platforms.
- Designed **PostgreSQL schema** optimized for scalability and secure voting data storage.

EdgeMindStudio – AI & Data Science Education Platform

Jan 2025 – Present

- Built **Next.js frontend** integrated with a **Django backend** for subscription-based learning content.
- Implemented **Stripe/PayPal** payment gateways and user authentication.
- Developed backend APIs to handle course access, Q&A forums, and analytics tracking.

AfriGPT – AI-Powered African Cultural Chatbot

Jan 2025 – Present

- Trained a **custom LLM model** on African cultural history, traditions, and language datasets.
- Built API endpoints for web and mobile chatbot integration.

TruNorth ROI Data Pipeline (in partnership with John Deere)

Role: Lead Data Engineer

- Built a data pipeline in Python that aggregates API data from various agricultural machinery.
- Developed a ROI calculator to assess cost-efficiency based on harvested output and equipment cost.
- Implemented metrics tracking and testing routines to ensure robust data inputs and outputs.

Generative Modeling for Synthetic Data (Ph.D. Research)

Role: Research Lead

- Designing a generative model architecture to create synthetic tabular data for research scenarios with missing or limited datasets.
 - Explores model fairness, privacy, and statistical performance under real-world data constraints.
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Publications & Presentations

First Author & Presenter

Masked Autoencoder for Data Recovery in Polymer Research

- Published in IEEE CARS 2024; presented results on using autoencoders for imputation and data recovery in experimental materials science.

Contributor

Towards Reliable CSI Feedback using Bayesian Neural Networks

- Accepted for ISICN 2025 (Springer Lecture Notes in Networks and Systems).
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Awards

- Presenter, IEEE CARS 2024 Conference
 - Paper Accepted, ISICN 2025 Conference
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CERTIFICATIONS

- AWS Certified Data Engineer – Associate (Planned)
 - Microsoft Certified: Azure Data Engineer Associate
 - Google Cloud Professional Data Engineer
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Additional Info

- U.S. Work Authorization: Yes
- Open to relocation and on-site internship roles for Summer 2024