Philip Fosu
Email: philip.fosu21@gmail.com **|| Cell: 337-707-7806 || *Current Location:* Houston, TX**

End-user-centric Data Scientist and Python Developer skilled in building and transforming data-driven models into production-ready microservices

WORK EXPERIENCE

Data Scientist - Contractor
Drax, Remote - May, 2025 - Present
- Developed end-to-end predictive maintenance and condition monitoring ML models augmented with RAG-based troubleshooting suggestions, reducing downtime by ~65% and accelerating root-cause analysis (Databricks, Azure, MLflow, NLP, Generative AI, Sklearn, Grafana).

Data Scientist
SABIC, Houston, TX – May, 2022 - May, 2025

Primary Duty
- Applying data science methodologies to drive product development, process optimization, maintenance, and reliability
- Building and deploying predictive models from Jupyter notebook into production-ready microservices to characterize various systems for different manufacturing processes
- Providing consultation to various teams and managers on solving complex problems via data-driven approach
- Participating in the assessment and introduction of new data technology to support digitization efforts

Key Achievements
- Implemented Autoencoder and PCA-based unsupervised learning anomaly detection algorithms to identify root causes of equipment failures, enabling proactive maintenance and reducing plant downtime (**Stack:** Python, Azure ML, Power BI)
- Engineered an end-to-end neural network-based multivariate time series models to forecast reactor variables (**Stack:** Python, Azure ML)
- Utilized Reinforcement Learning to develop and deploy an algorithm that helps operators to determine optimal dose rate and timing of catalyst regeneration depending on current plant conditions (**Stack:** Python, Shiny App)
- Developed a corrosion prediction model enabling the Mechanical Integrity team to identify severely corroded pipes beneath insulation, preventing potentially unsafe pipe rapturing events (**Stack:** Python, Shiny App)
- Successfully demonstrated that a well designed Statistical Process Control Chart can be used to detect the early-stage of chunking in gas-phase polyethylene reactor (**Stack:** Python, Shiny App, JMP)

Creator & Full-Stack Developer - *Chockma.com*
- Built a social platform for sharing bulleted takeaways - (**Stack:** Python, Django, JS, AWS S3, HTMX, HTML, Tailwind CSS)

Advanced Chemical Engineer
Naval Nuclear Lab., Schenectady, NY - December 2018 to April 2022
- Performed data-driven process improvement evaluations and presented discovered insights to senior staff.
- Generated computer-aided experimental designs and set up sampling plans to collect and analyze data

Process Engineer
GHD Inc., Irvine, CA - December 2014 to November 2017
- Performed miscellaneous process engineering tasks like mass and energy balance, process control strategies, optimization, economic sensitivity analysis, troubleshooting operational issues etc

EDUCATION & CERTIFICATES

- **Google Certified TensorFlow Developer - Exam code: TF-CO1 (ID: 66699316)** (01/2023)
- **IASSC Certified Black Belt: Lean Six Sigma (ID: GR764001751PF)** (11/2022)
- **SAS-JMP Certified Associate: Statistical Thinking for Industrial Problem Solving (ID: 03B7CFWCLFB4QT9X)** (10/2022)

Master of Engineering in Chemical Engineering
(Concentration in **Industrial Statistics)**
McNeese State University (ABET accredited)
Graduation: May 2014 **GPA:3.58**

Bachelor of Science in Chemical Engineering
McNeese State University (ABET accredited)
Graduation: May 2012

OTHER SKILLS

- Git, Docker, MLOPs, DoE, Hypothesis Testing, IoT, P&ID / PFD reading, SQL, DoE, Time-Series, Web Dev, Databricks, LangChain