

Philip Fosu
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Current Location: Houston, TX

Data Scientist and Python Developer with Lean Six Sigma Black Belt certification, specializing in data-driven process optimization and innovative technical solutions

WORK EXPERIENCE

Data Scientist

SABIC, Houston, TX – May, 2022 - Present

Primary Duties

- Applying modern data science methodologies to drive product development, process optimization, maintenance, reliability, and plant troubleshooting
- Building and deploying predictive models to characterize various systems for different manufacturing processes
- Providing expertise and consultation to various teams and managers on solving complex problems using applied statistics methods
- Performing exploratory data analysis to provide process improvement insights through various data-visualization techniques
- Participating in the assessment and introduction of new data technology to support digitization efforts

Key Achievements

- Implemented Autoencoder and PCA algorithms to identify root causes of equipment failures, enabling proactive maintenance and reducing plant downtime
- Engineered neural network-based multivariate time series models to forecast reactor variables, enabling proactive catalyst optimization and increasing plant yield
- Developed a corrosion prediction model enabling the Mechanical Integrity team to identify severely corroded pipes beneath insulation, preventing potential equipment failures
- 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
- Developed and deployed dashboards using Shiny for Python Express platform and Power BI

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/data collection plans
- Applied DMAIC, DMADV, and other Six Sigma methodologies to improvement projects

Process Engineer

GHD Inc., Irvine, CA - December 2014 to November 2017

- Performed miscellaneous process engineering tasks like mass and energy balance calculations, process control strategies, optimization analysis, economic sensitivity analysis, troubleshooting operational issues and other process design tasks for mostly water treatment plants design-build-operate projects

EDUCATION & CERTIFICATES

- [Google Certified TensorFlow Developer - Exam code: TF-C01 \(ID: 66699316\)](#) (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

SKILLS

- Pandas, Numpy, Scikit-learn, Data Visualization tools, Deep Learning (TensorFlow), Time Series Analysis, Reinforcement
- Jupyter Lab/Notebook, JMP, Power BI, Shiny Application for Python Express development(Posit Workbench)
- Python, HTML, CSS, Django, HTMX, Version Control, Model Deployment
- Aspen Plus, Aspen Process Explorer (IP-21), Chemical Engineering Processes and Operations, DoE, Hypothesis Testing