

Mithun Ghosh

(520)247-5305; mithunghosh404@gmail.com

<https://mithunprom.github.io/>

<https://www.linkedin.com/in/mithun-ghosh-304107109/>

EDUCATION

Ph.D., Systems & Industrial Engineering <i>The University of Arizona</i>	May 2022 (Expected) 3.88/4.0
Bachelor of Engineering, Industrial & Production Engineering <i>Bangladesh University of Engineering & Technology</i>	September 2015 3.71/4.0

TECHNICAL SKILLS

Languages:	Python, R, Java, Matlab, Julia, Github, C++	Database:	MySQL, MSSQL
Data wrangling:	NumPy, Pandas	Web scrapping:	Beautiful Soup
ML & DL:	Scikit-learn, Keras, TensorFlow, pytorch	Data Visualization:	Tableau, PowerBI, D3
NLP:	NLTK, TensorFlow, Pytorch	Big data:	Apache Spark (PySpark)

PROFESSIONAL EXPERIENCE

Lumen Technologies, Chicago, IL – Data Science Intern June 2021 – Aug 2021

- Created a **forecasting capability** that helps the business to make decisions regarding which product to grow, reduce or launch new product with **Time series forecasting** modeling.
- Collected data from **SQL server** and made queries on the model's **forecasting** output.
- Creating interactive **dashboards** and reports in **Power BI**.
- Integrated **PowerApps** with Power BI and SQL server to **model the headcount** of product lines and thus adjust the unit cost of a product. Gained experience in **cluster computing** with **pyspark**

The University of Arizona, Tucson, AZ – Curriculum Analytics Research Intern May 2020 – May 2021

- Conceptualized an online **Machine Learning** system with 10% improved efficacy of that state-of-the-art method to provide the student's progression scenario towards their degree.
- Extracted, transformed, and loaded student data to generate Statistics, accelerated the decision-making process, and effectively brainstormed and communicated with a large team.
- Mined the online data using **Selenium** and coined a new evaluation criterion for the demand of different program professions with a 20% higher chance for a successful career.

The University of Arizona, Tucson, AZ – Graduate Research Assistant Aug 2017 – Current

- Composed a **complex Bayesian regression framework**, adapted the **Gaussian Process** model with nonstationary data, and updated the hyper-parameters to predict the anomalies in the process with **92% accuracy**.
- Integrated **Classification** model for the X-ray images using **Deep Learning** tools like **CNN** for precisely detecting an X-ray **image** as normal or abnormal and expedited the detection process.
- Investigated the **Unstructured** data for the **sentiment analysis** using **Natural Language Processing** tools and developed a **predictive model** that has **9%** more accuracy than the cutting-edge methods.

KOHINOOR CHEMICAL CO. (BD) LTD, Dhaka, Bangladesh – Data Analyst Intern July 2014 – Sep 2014

- Applied statistical models to perform **Data analytics** for various production lines and boosted **profits by 5%** by contributing recommendations for **business growth**.
 - Executed **10% growth** in production lines productivity by time studying, also **eliminated bottlenecks** in some production lines with **Time Series Modeling**.
-

DATA SCIENCE PROJECTS

Battery Life Prediction- Regression and Clustering

Aug 2020 – Current

- Clustered the batteries through optimization and developed degradation paths for each clustered battery with a **clustering** algorithm. The risk factor is **reduced by 20%**.
- Considered both **between cluster heterogeneities** and **within cluster homogeneities** in the modeling framework.

Searching for the New Material Using Data Fusion

Jan 2019 - May 2020

- Orchestrated an efficient **data fusion** technique by transferring the information from other sources to the scarce primary data.
- Oversaw machine learning models in python to **predict** the promising material with the highest bandgap.

Anomaly detection – Regression and Classification

Aug 2017 – Oct 2018

- Modeled the glass profile data by applying machine learning **regression** framework and classified the outputs based on **classification** rule to detect any **anomalies** in the process.
- Implemented python libraries like **Numpy, Pandas, SciPy, Matplotlib, Scikit-learn** to find the best **predictive model and compared** with the **state-of-the-art methods**.

PUBLICATIONS:

[1] Ghosh, Mithun, *et al.* "Modeling multivariate profiles using Gaussian process-controlled B-splines." **IISE Transactions** (2020): 1-12.

[2] Ghosh, Mithun, et al. "Project time–cost trade-off: a Bayesian approach to update project time and cost estimates." **International Journal of Management Science and Engineering Management** 12.3 (2017): 206-215.

[3] Wu, L., Xiao, Y., Ghosh, M., Zhou, Q., & Hao, Q. (2020). Machine Learning Prediction for Bandgaps of Inorganic Materials. **ES Materials & Manufacturing**.

[4] Debnath, Prama, and Mithun Ghosh. "Multivariate Gaussian Process Incorporated Predictive Model for Stream Turbine Power Plant." **arXiv preprint arXiv:2103.14871** (2021).

[5] Ghosh, Mithun, Sahil Hassan, and Prama Debnath. "Ensemble Based Neural Network for the Classification of MURA Dataset." **Journal of Nature** 4 (2021): 1-5.

[6] Ghosh, Mithun, *et al.* "Random Forest incorporated multi-fidelity Gaussian Process to tackle the nonstationarity of the data." (**Under revision**)

[7] Ghosh, Mithun, *et al.* "Battery remaining useful life prediction working under dynamic workload conditions by latent class modeling." (**Currently Working**)