**Xiaoli Liu**

| Lexington, MA, 02421 | liuxlxl@hotmail.com |
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| 575-571-6342 | www.linkedin.com/in/liu-xiaoli |

# Senior Data Analyst

Self-motivated data analyst with extensive experience in the healthcare and fast-paced high-tech environment. Expertise in quantitative data analysis, experimentation, data mining, predictive modeling and data presentation to develop business strategy solutions. Proven ability to collaborate with cross-functional engineering teams, global product development, and senior executive leaderships to inform, influence, and execute product strategies. A unique blend of business acumen, technical expertise, and the ability to clearly communicate technical solutions to diverse audiences. Demonstrated track record of using data to help solve complex business problems, resulting in millions of dollars savings. A lifelong learner with deep curiosity, including earning the MIT Applied Data Science certification.

• Data Manipulation • Experimental Design and Analysis • Electronic Medical Records

• Data Visualization • Statistical Modeling • SQL server, Snowflake, Azure

• Data Mining • Random Forest/XGBoost • Python, R

• Data Science • Machine Learning • Power BI

• Exploratory Data Analysis • Multivariate Analysis • SAS/Stata, JMP

• Advanced Statistical Analysis• Linear Model/Regression/Classification • Microsoft Office Suite

# PROFESSIONAL EXPERIENCE

**MathWorks, Natick, MA**

**Senior Informatics Analyst/Senior Marketing Analyst 06/2023 - 08/2024**

Analyzed Marketing data, generated actionable insights, and delivered summary results to key stakeholders. Drove the development of data reporting, dashboards, and analytics to support marketing strategy execution.

**Philips Healthcare,** Cambridge, MA  **06/2018 - 12/2022**

## Senior Data Analyst – Quality Analytics/QA Engineer – Data Analytics

Applied innovative methodologies and automation techniques to drive efficiency improvements, ensure quality of medical devices, and deliver data-driven insights and solutions to optimize business strategy.

* Reduced work time from 8-16 hours to 1 minute by automating the Connected Care Product List update process using Python. Improved signal integrity of post market quality systems.
* Led quarterly Quality Monitoring Board meetings for Patient Monitoring and Emergency Care and Resuscitation divisions. Reviewed regulatory compliance, product quality, and key performance indicators. Identified key issues to support Philips critical quality targets in compliance, product quality, patient safety and operations.
* Improved work efficiency by applying machine learning techniques to analyze PM post market surveillance complaint trends, providing data driven insights that helped reduce complaint rates for medical devices.
* Ability to mentor - Influenced coworkers through reviewing peers’ work, mentoring junior members, and sharing new skills and approaches with the team.

**IM Flash Technology** (joined venture of Intel and Micron), Lehi, UT **03/2007 - 04/2018**

## Data Analysis Engineer

Identified root cause signals through extensive data mining using machine learning techniques to solve challenging problems and significantly improve yield. Led a cross-functional team to optimize repairs and enhance yield. Designed process experiments and built statistical models to optimize manufacturing processes. Delivered over $20 million in savings and a $5 million profit gain, earning two company Impact Awards.

* **Impact Awards**: Won two highly respected company Impact Awards that recognized teams that made the highest impact to the company.
* **$20M Savings**: Delivered over $20 million in savings by identifying root cause signals through extensive data mining using machine learning techniques for one of the challenging projects.
* **$5M Profit Gain**: Led a cross-functional team to optimize repairs, resulting in a 3% yield improvement and a 40%+ reduction in repairs, generating a $5 million profit gain.
* **Predictive Modeling**: Led data analysis team to build statistical predictive models using machine learning techniques, forecasting top 10 Pareto projects. Collaborated with metrology and operations to monitor and control critical model predictors.
* **Process Improvement**: Designed advanced process experiments for process improvement. Provided regression analysis reports on Design of Experiment (DOE) data, interpreted results, and made actionable recommendations.
* **Mentorship**: Supervised and mentored 5+ engineers, enhancing their data analysis skills and providing theoretical guidance on statistical related problems.
* **Trend Analysis**: Led electronic parameter trend analysis, compiling weekly trend reports and delivering presentations to cross-functional teams, driving continuous process improvement

# EDUCATION

# Master of Science in Experimental Statistics (EST), Major: Statistics

New Mexico State University (NMSU), Las Cruces, NM

# Master of Science in Electrical and Computer Engineering (EE), Major: Digital Communication

New Mexico State University (NMSU), Las Cruces, NM

# CERTIFICATION

**MIT Applied Data Science Program** **Certificate**, Score: **Excellent 2022**

This program covered the foundations of Data Science (Python and statistics/mathematics) along with five core areas: Data Analysis & Visualization, Machine Learning, Practice Data Science, Deep Learning and Recommendation Systems. The curriculum included 5 projects, 15 case studies and 15 practice applications across various domains such as economics, finance, marketing, healthcare. Additionally, I completed 5 Capstone Projects and participated in Hackathons Competitions. Each project followed the full data science process, including data exploration, model development, evaluation, training, validation, and deployment, using a wide range of data sources.

* Deep Learning Capstone Project - Malaria Detection: proposed Convolutional Neural Networks (CNN) model can detect Malaria with ~98% accuracy with RGB (Red, green, Blue) images taken from microscopic images.
* Hackathons Competition - Shinkansen Travel Experience: achieved ~95.4% accuracy to predict whether a passenger was satisfied or not considering his/her overall experience of traveling on the Shinkansen Bullet Train.

# PUBLICATIONS

C. Fiore, S. Jill, X. Liu, S. Schuster, L. Murray etc., “Vegetation on Irrigation Canals in Southern New Mexico” appeared in Western Society of Weed Science.

* Developed predictive statistical models for research data and executed data analysis to evaluate irrigation districts and design conservation strategies, providing clients with insights based on statistical results.

D. K. Borah and X. Liu, “Double cancellation receivers for asynchronous CDMA systems in multi-path channels” appeared in Proc. IEEE VTC.