

ELDIN ŠAHBAZ

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SUMMARY

Proven ability to plan and lead projects, design experiments, analyze time series and signals, conduct algorithmic research and development in machine learning and artificial intelligence, and communicate insights to stakeholders. Generated a 21% gain in mass spectrometry accuracy and generated an estimated annual cost savings in excess of \$500k in mass spectrometry manufacturing.

PROFESSIONAL EXPERIENCE

Research & Development Engineer
INFICON

June 2018 - Present
Syracuse, New York

- Completed 11 studies and projects — leading and scoping data science efforts in cross-functional environments.
- Synthesized data for chemical detection and monitoring systems via SciPy.optimize, SciPy.stats, SciPy.integrate, and PySwarms — creating simulation-based compound identification A/B tests that cover 50% of the sensors.
- Conducted studies to examine and establish theoretical foundations for the GC-MS self-calibration subsystem — contributing to a larger product development effort with a projected relative revenue growth of 52%.
- Led technical reviews to define mathematical foundations for mass spectrometry algorithms — documenting their implementation logic and assumptions, designing an A/B test using SciPy.stats and Nolds, and delivering an improved algorithm using SciPy.optimize and Statsmodels — yielding a 21% increase in sensor accuracy.
- Developed a computational self-calibration algorithm for mass spectrometry sensors utilizing the fastDTW, Nolds, SciPy.interpolate, and SciPy.optimize libraries — projecting annual cost savings in excess of \$500k.

PRESENTATIONS

Data Science for the Modular Mass Spectrometer
INFICON Data Analytics Summit

November 2020

Get Started with Machine Learning and AI Today!
INFICON Data Analytics Summit

November 2020

Approaches to Automatic Text Summarization
Syracuse University iSchool Poster Session

April 2018

EDUCATION

Syracuse University
Master of Science ◇ Computer Science

May 2018

Syracuse University
Bachelor of Science ◇ Computer Science

May 2017
Summa Cum Laude

SKILLS & COMPETENCIES

Programming Languages Python, MATLAB, SQL, C++

Software & Tools PyTorch, Scikit-learn, Statsmodels, Pandas, SciPy, NumPy, NLTK, Gensim, openCV, Nolds, Seaborn, Matplotlib, NetworkX, billiard, ctypes, Linux, Git

Competency Areas AI, Deep Learning, Machine Learning, Statistical Learning, Linear Modeling, Nonlinear Modeling, Numerical Optimization, Regression, Classification, Statistics, Probability, Time Series Analysis, Statistical Signal Processing, Data Analysis, Data Mining, Data Visualization, Algorithms, Design Patterns