

# ELDIN SAHBABZ

Syracuse, New York, USA

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## SUMMARY

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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. Produced a 21% gain in mass spectrometry accuracy and generated annual projected manufacturing cost savings in excess of \$500k for mass spectrometry sensors.

## PROFESSIONAL EXPERIENCE

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**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

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**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

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**Syracuse University**  
Master of Science ♦ Computer Science

*May 2018*

**Syracuse University**  
Bachelor of Science ♦ Computer Science

*May 2017*  
Summa Cum Laude

## SKILLS & COMPETENCIES

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**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