

ELDIN SAHBAZ

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SUMMARY

Data science leader with 6 years of experience generating quantifiable business results in cost reduction and process optimization — delivering innovative patent pending AI-powered solutions. Demonstrated experience scoping and leading projects, designing robust unbiased studies and experiments, analyzing time series and signals, composing custom machine learning and artificial intelligence models/algorithms, interfacing with cross-functional teams and communicating insights to stakeholders, and deploying models to production.

PROFESSIONAL EXPERIENCE

Data Scientist

INFICON

June 2018 - Present

Syracuse, New York

- Directed patent-pending advances in manufacturing optimization for semiconductor sensor technologies via machine learning for time series utilizing PyTorch, Scikit-learn, fastDTW, Statsmodels.tsa, SciPy.stats, SciPy.interpolate, and SciPy.optimize — driving automation with projected annual cost savings in excess of US\$500k.
- Executed continuous improvement efforts by creating a novel bijective/invertible deep neural network for manufacturing optimization and automation utilizing PyTorch — achieving a 95% increase in model accuracy.
- Led technical reviews to define mathematical foundations for sensor processing algorithms — documenting their premises and implementation logic, 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.
- Managed studies examining and establishing theoretical foundations for chemical detection and monitoring systems — contributing to high-priority product development efforts expected to yield 52% revenue growth.
- Established KPIs and executed simulation A/B tests via synthetic chemical data utilizing PySwarms, SciPy.optimize, SciPy.stats, and SciPy.integrate — yielding 50% coverage across chemical detection/monitoring systems.

Research Experience for Undergraduates (REU)

Syracuse University | Data Lab

June 2017 - August 2017

Syracuse, New York

- Conducted research under the supervision of Dr. Reza Zafarani (Electrical Engineering and Computer Science).
- Modeled the expected number of views for social media content via an ensemble of boosting classifiers.

Software Engineer

Self-employed Contractor

June 2015 – September 2015

Syracuse, New York

- Sub-contracted on document management systems for government clients and a Forbes Global 2000 client.

Undergraduate Research Assistant

Syracuse University | The Hosein Research Group

August 2014 - May 2015

Syracuse, New York

- Conducted research under the supervision of Dr. Ian Hosein (Biomedical and Chemical Engineering).
- Awarded the Dean's Leadership Grant in support of ambitious undergraduate research endeavors.
- Quantified energy loss on solar cell surfaces via wave propagation models that simulate light trajectories.

PATENTS & PUBLICATIONS

Method of Auto Tuning One or More Sensors

U.S. Patent and Trademark Office

August 2022

Patent Pending

INVITED PRESENTATIONS

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|---|---------------|
| Data Science for the Mass Spectrometer <i>INFICON Data Analytics Summit</i> | November 2020 |
| Get Started with Machine Learning and AI <i>INFICON Data Analytics Summit</i> | November 2020 |
| Automatic Text Summarization — Deep Learning & Classical Approaches <i>Syracuse University iSchool Poster Session</i> | April 2018 |
| Characterizing Popularity Growth of Social Media Content <i>Electrical Engineering & Computer Science REU Seminar</i> | August 2017 |

PROFESSIONAL DEVELOPMENT

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|---|---------------|
| Linux Kernel Internals and Development (LFD420) <i>The Linux Foundation</i> | December 2019 |
| Machine Learning Workshop — Model Predictive Control & Process Analytics <i>INFICON</i> | June 2019 |
| Embedded Linux Development with Yocto Project (LFD460) <i>The Linux Foundation</i> | June 2018 |

HONORS & AWARDS

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|---|------------------------|
| Graduate Merit Scholarship <i>Syracuse University</i> | August 2017 - May 2018 |
| Summa Cum Laude <i>Syracuse University</i> | May 2017 |
| The Warren Semon Prize <i>Syracuse University</i> | May 2017 |
| Dean's Leadership Grant <i>Syracuse University</i> | September 2014 |
| Dean's List <i>Syracuse University</i> | August 2014 - May 2017 |
| The Founders' Scholarship <i>Syracuse University</i> | August 2014 - May 2017 |

EDUCATION

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|---|------------------------------------|
| Syracuse University <i>Master of Science Computer Science</i> | May 2018 |
| Syracuse University <i>Bachelor of Science Computer Science</i> | May 2017 <i>Summa Cum Laude</i> |

SKILLS & COMPETENCIES

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|-----------------------------|---|
| Software & Tools | Python, 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 & Nonlinear Modeling, Numerical Optimization, Regression, Classification, Statistics, Probability, Time Series, Statistical Signal Processing, Data Analysis, Data Mining |