

ELDIN SAHBAZ

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SUMMARY

Accomplished data scientist with three years of progressive professional experience in a multinational company. Proven ability to plan and lead research efforts, design experiments, analyze time series and signals, conduct algorithmic research and development in artificial intelligence and machine learning, and communicate insights to stakeholders. Applied expertise in modeling complex chemical processes via physics and electrical sensor data. Among other accomplishments, successfully improved mass spectrometry signal quality — reducing error by 21%.

EDUCATION

Syracuse University Graduate Non-degree ♦ Mathematics	<i>May 2021</i>
Syracuse University Master of Science ♦ Computer Science	<i>May 2018</i>
Syracuse University Bachelor of Science ♦ Computer Science	<i>May 2017</i> Summa Cum Laude

SKILLS & COMPETENCIES

Programming Languages	Python, MATLAB, R, SQL, C++
Software & Tools	PyTorch, Scikit-learn, Statsmodels, Pandas, SciPy, NumPy, Matplotlib, Linux, Git
Competency Areas	AI, Deep Learning, Machine Learning, Statistical Learning, Linear & Nonlinear Modeling, Regression, Classification, Statistics, Probability, Time Series Analysis, Statistical Signal Processing, Data Analysis, Data Mining, Data Visualization
Soft Skills	Communication, Teamwork, Decision Making, Time Management, Planning

PROFESSIONAL EXPERIENCE

Engineer <i>INFICON</i>	Research & Development	June 2018 - Present <i>Syracuse, New York</i>
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- Delivered updates and status reports to the Senior Director of Development for Intelligent Sensor Solutions (ISS).
- Disseminated statistical ML and signal processing research at the internal global data science research conference.
- Applied data science expertise to mass spectrometry sensors and systems as a part of INFICON's ISS R&D group.
- Lead and planned data science initiatives in a cross-functional environment — completing 10 studies and projects.
- Collaborated with stakeholders to elucidate tangible research objectives from high-level problem statements.
- Conducted basic research documenting baseline predictive models — supporting subsequent product development.
- Counseled internal R&D teams, e.g., facilitated literature searches, discussed approaches, and partook in reviews.
- Coordinated with physical scientists to integrate domain expertise into the experiments and predictive models.
- Interfaced with software engineers to facilitate migrating algorithmic research and findings to existing technologies.
- Audited sensor performance via simulation studies — covering 58% of chemical detection and gas analysis sensors.
- Communicated advised manufacturing process improvements to stakeholders — addressing 70% of sensor records.
- Devised a mass spectrometry A/B model test — quantifying a 56% difference between legacy model test results.
- Modeled and improved mass spectrometry sensor performance and signal quality with a 21% reduction in error.

Software Engineer <i>Self-Employed</i>	June 2015 - September 2015 <i>Syracuse, New York</i>
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- Operated as an independent sub-contractor on development projects.
- Lead content management system development for a local and state government.
- Restructured, enhanced, and developed content management system processes for a Forbes Global 2000 company.

ACADEMIC APPOINTMENTS

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).
- Formulated a repeated measures experiment — querying structured and unstructured social media content.
- Modeled expected content attention — minimizing dimensionality while maximizing the cross-validation score.

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.
- Utilized wave propagation models to quantify solar cell energy efficiency and inform of optimal optical coatings.

PROJECTS

Mass Spectrometry DSP Algorithm

INFICON

- Surveyed and documented mathematical DSP models — establishing baseline performance benchmarks.
- Composed a randomized controlled experiment and statistical signal test to assess the model's goodness of fit.
- Deduced and vetted theories regarding casual relationships among variables — deriving statistical ML models.
- Improved mass spectrometry sensor performance and signal quality with a 21% reduction in estimation error.
- Presented signal processing research and results at the company-wide INFICON Data Analytics Summit.

Cryptocurrency Analysis

Syracuse University

Time Series Modeling and Analysis (MAS 777)

- Designed a study with team members to elucidate interrelationships among core cryptocurrencies on the market.
- Identified cryptocurrency pairs of interest via non-parametric correlation analysis and linear regression.
- Surveyed variables of interest — testing for unit roots and cointegration; visualizing ACF, PACF, and CCF plots.
- Assessed ARIMAX and VECM model fits via AIC estimates, BIC estimates, and residual analysis.
- Interpreted the statistical models, documented relevant findings, and presented this study's results.

Neural Text Summarization

Syracuse University

Natural Language Processing (CIS 668)

- Lead a cross-functional team of five in investigating extractive and abstractive text summarization techniques.
- Implemented the abstractive text summarization technique using a deep recurrent neural network (RNN).
- Presented extractive and abstractive text summarization with team members at the iSchool poster session.

Capstone Project

Syracuse University

Software Specification and Design (CIS 453)/Software Implementation (CIS 454)

- Lead and managed a team of five from SRS formulation to application development.
- Supported development, conducted weekly meetings, performed code reviews, and presented progress reports.
- Awarded best computer science capstone at the Engineering and Computer Science (ECS) open house.

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

Characterizing Popularity Growth of YouTube Videos

EECS Summer REU Seminar

August 2017

HONORS & AWARDS

Tuition Assistance Award <i>INFICON</i>	February 2021
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 Founder's Scholarship <i>Syracuse University</i>	August 2014 - May 2017

PROFESSIONAL DEVELOPMENT

Linux Kernel Internals and Development (LFD420) <i>The Linux Foundation</i>	December 2019
Machine Learning Workshop <i>INFICON</i>	June 2019
Embedded Linux Development with Yocto Project (LFD460) <i>The Linux Foundation</i>	June 2018