

# ELDIN SAHBAZ

Syracuse, New York, USA

+1 (607) 597-9607 ◇ sahbaz.eldin@gmail.com

eldin.home.blog ◇ linkedin.com/in/eldinsahbaz ◇ github.com/eldinsahbaz

## 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**

Postgraduate ◇ Mathematics

*February 2021 - May 2021*

**Syracuse University**

Master of Science ◇ Computer Science

*August 2017 - May 2018*

**Syracuse University**

Bachelor of Science ◇ Computer Science

*August 2014 - May 2017*

*Summa Cum Laude*

## PROFESSIONAL EXPERIENCE

---

**Engineer**

*INFICON*

**Research & Development**

June 2018 - Present

*Syracuse, New York*

- 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/B ML model tests for mass spectrometry sensors — quantifying 33% variation among previous models.
- Modeled and improved mass spectrometry sensor performance and signal quality with a 21% reduction in error.

**Software Engineer**

*Self-Employed*

June 2015 - September 2015

*Syracuse, New York*

- 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

---

**Summer 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 to predict expected attention of social media content over time.
- Queried structured and unstructured data — videos, audio, text, and channel statistics — from YouTube.
- Formatted data as a structured feature set and discretized content views, i.e., an ordinal dependent variable.
- Minimized feature dimensionality while maximizing the cross-validation score of an ensembled boosting classifier.

- 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 variable 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

### **Capstone Project** *Engineering & Computer Science Open House*

April 2017

## HONORS & AWARDS

---

### **Tuition Assistance Award** *INFICON*

February 2021

**Graduate Merit Scholarship**  
*Syracuse University*

August 2017 - May 2018

**Summa Cum Laude**  
*Syracuse University*

May 2017

**The Warren Semon Prize**  
*Syracuse University*

May 2017

**Dean's Leadership Grant**  
*Syracuse University*

September 2014

**Dean's List**  
*Syracuse University*

August 2014 - May 2017

**The Founder's Scholarship**  
*Syracuse University*

August 2014 - May 2017

## PROFESSIONAL DEVELOPMENT

---

**Linux Kernel Internals and Development (LFD420)**  
*The Linux Foundation*

December 2019

**Machine Learning Workshop**  
*INFICON*

June 2019

**Embedded Linux Development with Yocto Project (LFD460)**  
*The Linux Foundation*

June 2018

## PROFESSIONAL MEMBERSHIPS

---

**IEEE Member**

January 2015 - December 2015

## 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, Project Planning, Time Management

**Spoken Languages** English, Bosnian, Croatian