Nick **Asendorf**

Data Scientist · Software Manager

St. Paul, MN

443-605-3018 | nick.asendorf@gmail.com | asendorf.github.io | asendorf | asendorf

What's Next

My background is in statistical signal processing - some call this machine learning, others data science, others data analytics. Regardless of the buzzword or nomenclature, I approach projects by asking two fundamental questions: What data do you have? and What problem are you trying to solve? For the past year, I've managed a team of software engineers. This foray into management has allowed me to improve my leadership skills, hone my management style, and develop the culture I try to instill. I am looking to manage a software team for a company with a clear vision and roadmap, the ability to strategically prioritize, and a team of brilliant engineers with the tenacity to make it all happen.

Education

University of Michigan — *Ann Arbor, MI*

Ph.D. and M.S. in Electrical Engineering: Systems — *Aug 2010 - May 2015*

- GPA: 4.0/4.0
- Advisor: Prof. Raj Rao Nadakuditi
- Dissertation: "Informative Data Fusion: Beyond Canonical Correlation Analysis" Link to pdf

University of Maryland — *College Park, MD*

B.S. in Computer Engineering — *Aug 2006 - May 2010*

- GPA: 4.0/4.0, Gemstone Honors Program, Eta Kappa Nu

Industry Experience

3M Company, Corporate Research Systems Lab — *Maplewood, MN*

Software Research Manager — *Feb 2019 - Present*

- Supervise 18 full stack developers and software engineers across 13 scrum teams.
- Restructured team's recruiting strategy resulting in 6 new hires, growing the team from 13 to 18.
- Chief Product Owner for automated design initiative.
- Improved lab's scrum practices by proposing and implementing scrum at scale and visible online master backlog.

Data Scientist — *Aug 2015 - Jan 2019*

- Led a research team that deployed anti-counterfeiting algorithms using image processing, deep learning, and machine learning algorithms. Enabled global rollout of iOS application with custom Tensorflow algorithms deployed in Microsoft Azure.
- Developed population health analytics tools in collaboration with Verily Life Sciences.
- Developed a proof-of-concept materials informatics tool (Python, Flask, Docker, DynamoDB, and Angular) to connect formulation and performance data.
- Developed a supply chain analytics tool and visualizations in partnership with C3IoT.
- Explored natural language processing algorithms for analysis of medical records and customer call data using Spark, word embeddings, and Microsoft Power BI.
- Deployed a python machine learning algorithm on AWS that automated sales lead assignments.
- Developed a `MATLAB` tool to analyze chemical data using blind source separation algorithms.
- 7 patent applications

R&D Graduate Intern — *Summer 2014*

- Analyzed unstructured text data from large-scale medical databases using Hadoop MapReduce and natural language processing algorithms.
- Analyzed traffic flow data to identify outliers using spatio-temporal algorithms.

AAI Corporation, Textron subsidiary — *Hunt Valley, MD*

Software Engineering Intern — *Summers 2007, 2008, Winter 2009*

- Debugged and added additional features to a legacy `C++` user interface that controlled multi-generational unmanned aircraft.
- Developed Wireshark scripts that captured and decoded communication messages from unmanned aircraft.

Academic Experience

University of Michigan — *Ann Arbor, MI*

Graduate Student Research Assistant — *Aug 2010 - May 2015*

- Ph.D. research included multi-modal data fusion, correlation analysis, random matrix theory, data driven algorithms for machine learning and statistical signal processing applications, and detection theory.

University of Maryland *College Park, MD*

Undergraduate Research Intern *June 2009 - May 2010*

- Designed and performed auditory MEG experiments exploring neural responses to low-frequency auditory stimuli.
- Developed noise reduction algorithms for time-frequency analysis of MEG data.

Skills

Expert in Python, git, LaTeX, Machine Learning, `MATLAB`

Experience with Docker, Tensorflow, AWS (Sagemaker, EC2, S3, ECS, DynamoDB), Azure (VM), Django, Flask, Spark, Jira, Azure DevOps

Tinkered with HTML, CSS, Angular, AWS (CloudFormation, TexTract, Rekognition), Java, Javascript, `C#`, `C++`

Strengths include Leadership, Prioritization, Communication, Tenacity

Honors & Awards

2018 **Individual CTE&I,** 3M Corporate Research System Lab

2017 **Team CTE&I,** 3M Health Care Business Group

2017 **Individual CTE&I,** 3M Corporate Research System Lab

2014 **Awardee,** Richard and Eleanor Towner Distinguished Academic Achievement Prize

2013 **Finalist,** Qualcomm Innovation Fellowship

2013 **Best Poster Award,** University of Michigan Engineering Graduate Symposium

2012 **Best Poster Award,** University of Michigan Engineering Graduate Symposium

2010 **Awardee,** University of Michigan Rackham Merit Fellowship

Selected Publications

2017 **IEEE Transactions on Information Theory,** Improved Detection of Correlated Signals in Low-Rank-Plus-Noise Type Data Sets Using Informative Canonical Correlation Analysis (ICCA), Link to publication

2013 **IEEE Transactions on Signal Processing,** The Performance of a Matched Subspace Detector That Uses Subspaces Estimated From Finite, Noisy, Training Data, Link to publication

Service

2019-present **Mentor,** University of Maryland Gemstone Alumni Mentor & Partner Program

2015-present **Judge,** Minnesota State Science Fair

2015-2019 **Mentor,** Totino Grace High School Engineering Program

2010-2014 **Member,** Michigan ECE Graduate Student Council (President 2012-2014)

2011-2014 **Organizer,** Michigan Student Signal Processing Seminar Series