Nick **Asendorf**

AI Manager · ML Researcher

St. Paul, MN (open to relocation)

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What's Next

My background is in statistical signal processing - some call this machine learning, others data science, others artificial intelligence. Regardless of the buzzword, I approach projects by asking two fundamental questions: What problem are you trying to solve and what data do you have? For the past few years, I've managed teams of software engineers and AI researchers. This experience has allowed me to sharpen my leadership skills, hone my management style, and develop the culture I try to instill. I am looking to build and manage a machine learning team for a company with the ability to strategically prioritize, committment to develop and implement a compelling vision, and tenacity to make it happen.

Industry Experience

3M Health Information Systems Division   *Maplewood, MN*

Machine Learning and Data Science Manager   *Jan 2022 - Present*

- Supervise, mentor, and coach 19 machine learning and AI researchers across 7 product teams.
- Transitioned team through large corporate reorganization. Prioritized and onboarded team to new projects, aligning project needs with team's skillsets and passions. Team's research portfolio includes NLU and speech recognition for healthcare applications.

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

Machine Learning and Data Science Manager   *Aug 2021 - Dec 2021*

- Supervised, mentored, and coached 22 machine learning and AI researchers across 8 scrum teams.
- Responsible for team's IP strategy and research portfolio, including computer vision for healthcare and manufacturing process control, reinforcement learning for manufacturing, GANs for automated product design, and active learning for material discovery.
- As part of corporate DE&I task force, developed an executive mentorship program for technical employees.

AI Software Manager   *Feb 2019 - July 2021*

- Supervised, mentored, and coached a team of 15 full stack developers and software engineers across 10 scrum teams.
- Developed team's recruiting strategy resulting in 14 new hires.
- Product Owner for research collaboration with the University of Chicago developing molecular dynamic simulation for material discovery.
- Product Owner for AWS cloud infrastructure team developing internal material discovery web applications.
- Improved lab's scrum practices by proposing and implementing scrum at scale and an 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. 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).
- Developed a supply chain analytics tool and visualizations in partnership with C3 AI.
- Explored natural language processing algorithms for analysis of medical records and customer call data using Spark and word embeddings.
- 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. 1 Granted.

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.

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, detection theory, and data driven algorithms for machine learning and statistical signal processing applications.

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.

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

Skills

Strengths include Communication, Team building, Technical recruiting, Mentorship, Prioritization, Tenacity
Experience with Machine Learning, python, git, LaTeX, MATLAB, Docker, AWS (CloudFormation, Lambda, Sagemaker, EC2, S3), Tensorflow
Tinkered with HTML, CSS, Angular, AWS (TexTract, Rekognition, ECS, DynamoDB), Spark, Java, Javascript, Django, Flask, C#, C++

Honors & Awards

2018	**Technical Excellence & Innovation Award (Individual),** 3M Corporate Research System Lab
2017	**Technical Excellence & Innovation Award (Team),** 3M Health Care Business Group
2017	**Technical Excellence & Innovation Award (Individual),** 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