

# Michael Sachs

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I am a data and technology leader with demonstrated success applying machine learning, analytics, and data science in highly technical domains. I have a track record of driving business value, building world-class teams, leading complex, enterprise wide cross-functional initiatives, and delivering data science products that inform high stakes decision-making, save millions of dollars, and supercharge the product experience for hundreds of millions of customers.

## Experience

### Netflix

#### Senior Data Science Manager, Infrastructure

Jan 2022 - Sept 2024

Led the Data Science team focused on Netflix's billion-dollar infrastructure. This includes all the cloud infrastructure that Netflix rents from AWS as well as Netflix's custom-built global content distribution network.

- Built Netflix's first ML for Systems team, tasked with using algos and ML to improve Netflix's infrastructure. This team wrote the optimization code to steer all Netflix AWS traffic, developed ML models for workload placement in AWS and Spark job optimization, designed algos to predict Live event traffic for service scaling, and used LLMs to classify customer service activity and connect the results to known issues.
- Led the cross-functional effort to build AWS cost efficiency data and analytics tools - enabling Netflix to better manage its nearly \$800 million cloud infrastructure spend.
- Developed experimentation tools that helped developers automatically test changes against production, and revealed expected costs of proposed new features as part of experiment results.
- Built the data and tools that monitored Netflix up-time, helped investigate incidents, and managed and improved developer productivity.
- Co-lead the development of the first "Data and Insights Day" for the 500-person data science org, and co-wrote new job families for Analytics Engineer and Machine Learning Engineer roles.

#### Data Science Manager, Content Distribution Infrastructure

Sept 2020 - Jan 2022

Led the Data Science team focused on Netflix's custom-built global content distribution network: Open Connect.

- Led the cross-functional effort to build data science infrastructure from the ground up for the new Netflix Cloud Games product.
- Developed ML models to improve the performance of Netflix's global VPN detection systems, to proactively distribute new content based on predicted demand across the globe, to predict streaming traffic and to predict streaming server utilization.
- Conducted experiments to test how TCP pacing algorithms and client server distance affects streaming quality, improved self service experimentation capabilities for network research teams, and built better testing and experimentation methods for updating streaming server operating systems.
- Built high volume data pipelines to collect TCP black box logs: ultra-high resolution logging of TCP activity.
- Partnered in the development of Data Science IC levels.

## **FLYR**

### **Head of Product**

Mar 2019 - Apr 2020

FLYR was using AI to change airline ticket pricing. Led the Product, Program and later Data Science organizations.

- Re-envisioned the product to enable it to scale beyond FLYR's seed customers.
- Led a team of 22 people distributed across: San Francisco, Krakow, Poland, and Kuala Lumpur, Malaysia.
- Spearheaded the adoption of a data-driven product development approach by measuring the quality of the pricing decisions, which expanded FLYR's customer footprint, and improved pricing models.
- Managed partner relationships with JetBlue, Air Asia and Air New Zealand.

### **Head of ML Platform**

Nov 2018 - Mar 2019

Founded and led the team responsible for FLYR's ML infrastructure.

- Led a team of seven Data Scientists and Engineers.
- Led the creation of end-to-end ML development tools to speed the iteration and deployment of new models and to improve reliability.
- Designed the system architecture for FLYR's production inference pipeline.

## **Radius Intelligence**

### **Data Science Manager**

Mar 2017 - Oct 2018

Radius Intelligence used curated data to connect B2B marketing and sales teams to potential customers. Led the data science team who was responsible for the quality and comprehensiveness of this data.

- Researched and deployed new methods to improve the data through enrichment and automated quality monitoring.
- Worked closely with engineering teams to improve systems that did entity resolution, search space reduction, and clustering.
- Provided technical leadership and hands-on modeling and coding work for Radius's updated matching framework to allow faster iteration on model code to drive performance improvements on matching precision and recall.
- Defined the charter at Radius for how to measure the impact of research, clarified roles within the data science function, and developed a job ladder for data scientists.
- Developed strong relationships with engineering and product leadership to define operating cadence and cross-functional team success.

## **Discovery Digital Networks**

### **Director of Data Science and Technology**

Sept 2014 - Mar 2017

Discovery Digital Networks (DDN), produced Discovery Channel branded, short form video content for online distribution. Led the Data and Engineering organization.

- Led a team of 10 software architects, web engineers, and app engineers in implementing and maintaining a suite of online properties with two million unique users per month.
- Migrated all DDN web and data infrastructure to AWS.

- Developed a microservice-based web architecture to replace the legacy PHP framework. The new system more than halved the page delivery and rendering time, and resulted in vastly improved stability and reduced development time
- Designed and built a robust streaming video data science platform using Python, Redshift and EC2. This platform supported data collection, distribution and analysis across multiple Discovery Communications brands including The Discovery Channel, Animal Planet and The Science Channel, ingesting and analyzing over 500 million rows of data per day.

### **Data Scientist**

Mar 2014 - Sept 2014

Founded the Data Science discipline at Discovery Digital Networks.

- Developed insights applications and content performance metrics that enabled data-driven business and content decision making.
- Designed forecasting algorithms to track content performance and inform creative and business decision-making (incl. predicting 30-day performance of individual titles and 12-month performance of entire networks).

## **University of California, Davis and Columbia University**

### **Graduate Student, Researcher, Associate Instructor**

Jan 2005 - Mar 2014

Studied physics and math at Columbia and UC Davis. Research focus was complex systems and computation. Awarded a NASA Earth and Space Science Fellowship.

## **Weill Cornell Medical College and New York Presbyterian Hospital**

### **Product Manager, Senior Web Designer**

Jun 2002 - Jan 2005

Designer and product manager responsible for developing the Weill Cornell Medical College and New York Presbyterian Hospital suite of public websites.

- Established a consistent design language that tied together the primary sites for each institution with a host of department websites.
- Collaborated with hospital and college staff to develop content strategy.

## **Xperts Inc.**

### **Creative Director, Designer**

Mar 1997 - Jun 2002

Designer and later the leader of the design team at this mid-size technology consulting firm during the height of the dot-com boom.

- Partnered with dozens of clients ranging from start-ups, to small businesses, to giant corporations on design and UX for web applications.
- Improved the quality of UX and design work across all of Xperts through hiring, design reviews and guidance and mentorship.
- Collaborated with the business development organization on acquiring new clients.

## **Technologies**

### **Languages**

Python, SQL, JavaScript, C, C++, HTML, CSS, IDL, Mathematica, MatLab, lisp, and ActionScript.

### **Applications, Modules, Libraries and Frameworks**

PySpark, Databricks, Numpy, Scikit-learn, TensorFlow/Keras, Scipy, Pandas, MySQL/PostgreSQL, Google BigQuery, Matplotlib, Jira, Confluence, SQLAlchemy, Celery, Cassandra, Redshift, D3.js, Boto, Flask, HDF5, Django, JQuery, PIL, Ajax, Hadoop, WordPress, MPI, Adobe Illustrator, and Adobe Photoshop.

### **Cloud Platforms**

Amazon Web Services, Google Cloud Platform

## **Education**

### **University of California, Davis**

Completed physics PhD, 2013

- Adviser: Professor John B. Rundle
- Area of Study: Computational physics and complex systems
- Course work completed with a 3.87 GPA

### **Columbia University**

Completed undergraduate physics curriculum, 2007

- Physics and math coursework in order to prepare for graduate school.
- 3.99 GPA

### **Virginia Commonwealth University**

Bachelor of Fine Arts, Graphic Design, School of the Arts, 1995

- Top visual arts program among US public research universities according to the NSF.
- 3.24 GPA