

# Michael Sachs

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Accomplished data and technology leader with extensive experience in machine learning, analytics, and data science. Proven track record of driving business value, building world-class teams, and leading complex, enterprise-wide cross-functional initiatives. Expertise in delivering data science products that inform high-stakes decision-making, save millions of dollars, and enhance the product experience for hundreds of millions of customers.

## Experience

### Netflix

#### Senior Data Science Manager, Infrastructure

Jan 2022 - Sept 2024

- Led the team of ML engineers, causal inference scientists and analytics engineers focused on improving the performance of Netflix's billion-dollar product and research infrastructure.
- Built Netflix's first ML for Systems team, optimizing AWS traffic, predicting demand for capacity planning - including for Live events, developing ML models for workload placement, and using LLMs to classify customer service activity, resulting in improved infrastructure efficiency and performance.
- Led cross-functional efforts partnering with Finance and Engineering to build AWS cost efficiency tools, managing nearly \$800 million cloud infrastructure spend.
- Developed experimentation tools to test changes against production, and reveal expected costs of proposed new features enhancing developer productivity and efficiency.
- 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 ML, data, and causal inference team focused on improving the performance and efficiency of Netflix's global content distribution network: Open Connect.
- Led the cross-functional effort to build data capabilities 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 streaming server utilization for capacity planning.
- Conducted experiments to test how TCP pacing algorithms and client server distance affects streaming quality; improved self service experimentation capabilities for network research teams; 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

- Led a team of 22 people across San Francisco, Krakow, Poland, and Kuala Lumpur, Malaysia, driving data-driven product development and improving pricing models to achieve FLYR's mission to rethink airline ticket pricing using AI.
- Spearheaded the adoption of a data-driven product development approach, expanding FLYR's customer footprint and enhancing pricing models.

- Managed partner relationships with JetBlue, Air Asia, and Air New Zealand, ensuring successful collaborations and business growth.

### **Head of ML Platform**

Nov 2018 - Mar 2019

- Founded and led the team of engineers and data scientists responsible for FLYR's ML infrastructure, managing a team of seven Data Scientists and Engineers.
- Created end-to-end ML development tools centered around GCP and DVC, enabling data and model versioning, and improving model iteration speed by 80%.
- Designed the system architecture for FLYR's production inference pipeline, reducing system runtime from around 8 hours to 4 hours, and reducing the frequency of failures by about 96%.

### **Radius Intelligence**

#### **Data Science Manager**

Mar 2017 - Oct 2018

- Led the research team responsible for developing methods to improve the quality and comprehensiveness of Radius Intelligence's core B2B marketing data product.
- Partnered with engineering teams and provided technical leadership in improving systems that did entity resolution, search space reduction, clustering and entity matching, resulting in an approximate 90% improvement in AUC.
- Defined the charter for measuring research impact, developed a job ladder for data scientists, and fostered strong cross-functional relationships to ensure team success.

### **Discovery Digital Networks**

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

Sept 2014 - Mar 2017

- Led a team of 10 engineers, responsible for Discovery Digital Networks (DDN), Discovery Channel branded, short-form video distribution footprint with two million unique users per month.
- Migrated all DDN web and data infrastructure to AWS, enhancing stability and reducing development time by over 50%
- Designed and built a robust streaming video data science platform using Python, Redshift, and EC2, supporting data collection and analysis of over 500 million rows of data per day.

#### **Data Scientist**

Mar 2014 - Sept 2014

- Founded the Data Science discipline at Discovery Digital Networks, enabling data-driven business and content decision making.
- Developed insights applications and content performance metrics that provided an integrated view into video performance across six distribution channels, enhancing decision-making processes and improving content performance tracking.
- Designed forecasting algorithms to predict 30-day performance of individual titles and 12-month performance of entire networks, around 95% of the forecasts were within 10% of the actuals.

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

Graduate Student, Researcher, Associate Instructor

Jan 2005 - Mar 2014

- Earned a PhD in Physics from UC Davis and studied undergraduate Physics and Math at Columbia University, demonstrating a strong foundation in technical and quantitative fields.
- Conducted research focused on complex systems and computation, showcasing technical acumen and expertise in data-driven methodologies.
- Awarded a prestigious NASA Earth and Space Science Fellowship, highlighting recognition for outstanding research contributions and potential for impactful results.

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

Product Manager, Senior Web Designer

Jun 2002 - Jan 2005

- Led the development of the Weill Cornell Medical College and New York Presbyterian Hospital suite of public websites, establishing a consistent design language across primary and department sites.
- Collaborated with hospital and college staff to develop and implement a comprehensive content strategy, enhancing user engagement and content accessibility.
- Directed cross-functional teams to ensure cohesive design and content integration, resulting in a unified and user-friendly web presence.

## **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, ScikitLearn, 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