

# Matthew J. Nitzken

SENIOR MACHINE LEARNING ENGINEER AND DATA SCIENTIST

Louisville, KY

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## About

I am an engineer who specializes in data science, machine learning, and analytics. I have worked extensively as a full stack machine learning engineer and data scientist in large scale data environments, as well as designing and implementing new intelligent solutions and ideas into products. My education background includes electrical, computer, and bioengineering studies. In addition to working in end-to-end data science and machine learning, I have worked in healthcare, deep learning, data engineering, research, medical diagnostics, image and signal processing, technical publishing, software development, and controls automation areas throughout my career.

## Skills

Python

Machine Learning

Big Data

Data Analytics

ETL

Consultation

Agile Collaboration

Test Driven Design

## Education

### University of Louisville

DOCTOR OF PHILOSOPHY (PH.D.), IN ELECTRICAL AND COMPUTER ENGINEERING

- Dissertation: Shape Analysis of the Human Brain

Louisville, Kentucky

2010-2015

### University of Louisville

MASTERS OF ENGINEERING (M.ENG.), IN BIOENGINEERING

- Thesis: Shape-Based Detection of Cortex Variability for More Accurate Discrimination between Autistic and Normal Brains

Louisville, Kentucky

2009-2010

### University of Louisville

BACHELOR OF SCIENCE (B.S.), IN BIOENGINEERING

- Capstone: Diagnosis of Kidney Transplant Success Using Image Segmentation And Intensity Analysis Techniques

Louisville, Kentucky

2005-2009

## Experience

### DataRobot

SENIOR MACHINE LEARNING ENGINEER AND DATA SCIENTIST - TIME SERIES

Data Scientist working on time series, model understandability and insights, predictions, and scalability.

- Created and lead development and planning for the Time Series unsupervised clustering framework. This was a new end to end product that supported feature processing, automated modeling, insights, and predictions.
- Work closely with product and other team members to keep new features and improvements to existing products on schedule.
- Develop comprehensive QA testing plans and work alongside QA engineers to ensure product reliability.
- Implement critical improvements to core backend code infrastructure to make the product faster, more efficient, and more stable.
- Provide data science and modeling support to customers and internal customer facing data scientists.
- Experience focused on Python, Linux, AWS, MongoDB, Postgres, Jenkins, and TDD

Louisville, KY - Remote

Dec 2021 - Present

### DataRobot

SENIOR DATA SCIENTIST - TIME SERIES

Data Scientist working on time series, scalable modeling, and feature engineering.

- Lead engineer for the Segmented Modeling product which allows users to take a single dataset that contains a variety of semi-related data sources and constructs a single entity that is capable of making accurate predictions in an end to end system across the whole dataset.
- Work alongside product managers and customers to identify and implement solutions to fit customer requested machine learning needs.
- Program and release full stack machine learning training environments.
- Consult directly with customers to understand and assist them in implementing high accuracy deployed predictions for complex use cases.
- Experience focused on Python, Keras, Linux, AWS, MongoDB, Postgres, Jenkins, and TDD

Boston, MA

July 2021 - Dec 2021

## DataRobot

Boston, MA

### DATA SCIENTIST - TIME SERIES

July 2019 – July 2021

Data Scientist working on time series and deep learning.

- Designed and lead implementation of critical large scale data warehousing and feature engineering infrastructure for key initiatives involving regular and time series machine learning with built in automation and trust frameworks.
- Development of new automated features, tools, and models for the DataRobot Time Series.
- Engage with customers to identify requirements and priorities for software development, and to help teach and explain ways to understand and improve their Time Series modeling.
- *Experience using Python, Tensorflow, Keras, Linux, AWS, GCP, MongoDB, Postgres, SQL, SQLAlchemy, Snowflake, Jenkins, TDD*

## Humana

Boston, MA

### LEAD DATA SCIENTIST - DIGITAL EXPERIENCE CENTER (XC)

Oct 2018 – July 2019

Transitioned to new pioneering team at Humana in Boston to develop and deploy real-time deep learning neural networks focused on end users.

- Develop and design digital personalized healthcare experiences for Medicare members.
- Used Google Cloud Platform to migrate data from on-prem, develop new data engineering pipelines, and create real-time deep learning models.
- Worked I'm balanced team to help develop and design front end applications with intelligence.
- *Experience using Python, Tensorflow, Keras, Linux, GCP, Postgres, SQL, Airflow, Beam, JS, TDD, and Hadoop*

## Humana

Louisville, KY

### LEAD DATA SCIENTIST - HQRI AND STARS ANALYTICS

Apr 2018 – Oct 2018

Lead development of new machine learning models using internal infrastructure and AWS while collaborating and teaching other data scientists and engineers.

- Identified business areas and developed machine learning solutions to improve decision making.
- Consulted with leadership to explain impacts of predictions to the business, and how they could be used to guide and plan future actions.
- Tested new big data infrastructure and promoted new cross team big data practices to promote a data first approach.
- *Experience using Python, SkLearn, Tensorflow, Keras, SAS, TDD, SQL, Hadoop, Netezza, and Linux*

## Humana

Louisville, KY

### DATA SCIENTIST - CLINICAL ANALYTICS

Dec 2017 – Apr 2018

Helped drive the development of new data and feature engineering pipelines used across multiple teams and helped introduce agile data science.

- Applied agile methodology to collaboratively develop new machine learning solutions for ongoing challenges.
- Lead enterprise feature engineering efforts on AWS/Hadoop environment while improving and simplifying existing ETL pipelines and data analyses.
- *Experience using Python, SAS, SkLearn, Tensorflow, Hadoop, Hive, SQL, and TDD*

## Humana

Louisville, KY

### ANALYTICS CONSULTANT - CLINICAL ANALYTICS

Oct 2016 – Dec 2017

I worked as a clinical analyst on CMS Stars Analytics data, developing predictive models and helping to explain data and results with visual analytics.

- Developed predictive models designed to identify members with chronic conditions using SAS and Python.
- Simplified major production processes to be maintainable and promote collaborative development.
- Identified new ways of analyzing complicated questions for company leadership and providing ways to tell the story of the data.
- *Experience using SAS, Python, SkLearn, Oracle, Netezza, and SQL*

## Alliant Technologies

Louisville, KY

### LEAD SOFTWARE AND CONTROLS ENGINEER - SORTATION AND AUTOMATION SYSTEMS

Jan 2016 – Oct 2016

Lead controls and software developer for automated high-speed sorter systems.

- Responsible for leading software development and controls commissioning teams in system development and quality assurance testing for large scale projects.
- Created communications stack and tray sortation systems for high speed material handling applications deployed at multiple locations across the country.
- Large amounts of experience with developing and troubleshooting complex systems and rapidly implementing new features and fixes.
- *Experience using Python, Rockwell Automation, TDD, and C#*

## Alliant Technologies

Louisville, KY

### SOFTWARE ENGINEER - SORTATION AND AUTOMATION SYSTEMS

May 2015 – Jan 2016

With Alliant Technologies I developed computer and PLC applications for use in production industrial material handling applications.

- Designed and implemented test driven interfaces for testing engineering applications in a development environment using C and C#.
- Part of a team that developed complete system designs for material handling systems, including, sorters, singulators, and parcel merging controllers.
- Integrated hardware and electrical systems with mid- and upper-level computer software.
- *Experience using Rockwell Automation PLCs, TDD, C, C#, and Linux*

## NeuroAtlas

Louisville, KY

### FOUNDER AND MACHINE LEARNING ENGINEER

Mar 2013 – May 2015

I was one of the founders and the primary machine learning engineer and researcher for NeuroAtlas, a company developing neurological diagnostic software for individuals with autism spectrum disorders.

- Developed startup stage business plans, participated in two healthcare accelerator programs (XLerateHealth and LaunchIT in Louisville, KY), and several grant funded initiatives.
- Was responsible for co-leading direction, design, fundraising, and community engagement.
- *Experience with converting ideas, data, and algorithms into stories that people can understand and connect with, Lean Startup, user discussions, and outreach*

## University of Louisville

Louisville, KY

### GRADUATE RESEARCHER - BIOIMAGING LABORATORY

Jul 2010 – May 2015

At the University of Louisville I was a part of the Bioimaging laboratory, leading and developing new machine learning solutions for digital diagnostics.

- Developed and published 2D/3D shape and image processing algorithms, computer assisted diagnostic machine learning solutions, and signal processing algorithms.
- Designed and implemented a large scale intelligent 3D mesh analysis software package.
- Researched algorithms in diagnostics and detection of autism, dyslexia, cancer, Alzheimer's, heart, EMG, and ECG.
- Communicated research and discoveries to the global community through oral and poster presentations at national/international conferences.
- *Experience using Matlab, C++, C#, LaTeX, Linux, and Java*

## Neuroscience Collaborative Center

Louisville, KY

### BIOMEDICAL ENGINEER - FRAZIER REHAB INSTITUTE

Jan 2008 – Jul 2010

At the NCC I developed technology to assist para- and quadriplegic individuals in rehabilitation.

- I developed mechanical and software solutions, including training apparatus and data collection systems, to assist in therapies.
- Collaborated in laboratory testing and data quality control.
- Assisted with leading spinal treatment clinical trials in humans.
- *Experience using C#, Labview, Matlab, and clinical data collection platforms*

## Publications and Patents

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Please see [publications.mattnitzken.com](http://publications.mattnitzken.com) for an up-to-date list of my publications and patents.