

# Matthew J. Nitzken

SENIOR DATA SCIENTIST · ELECTRICAL & COMPUTER ENGINEER · BIOENGINEER

Boston, MA

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## About

I am a Data Scientist with a background in Electrical, Computer, and Bioengineering. I specialize in data science, machine learning, and analytics. I have worked extensively as a full stack data scientist in large scale data environments, as well as designing and implementing new intelligent solutions and ideas into products. I have experience in data science and machine learning, in addition to healthcare, deep learning, data engineering, research, medical diagnostics, image and signal processing, technical publishing, software development, and automation.

## 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 DATA SCIENTIST - TIME SERIES

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

- Working on time series, scalable modeling, and feature engineering.
- Experience using Python, Keras, Linux, AWS, MongoDB, Postgres, Snowflake, Jenkins, TDD

Boston, MA

July 2021 – Present

### DataRobot

DATA SCIENTIST - TIME SERIES

Data Scientist working on time series and deep learning.

- Designed and lead implementation of trusted COVID-19 data warehousing, feature engineering, and forecasting engine used by numerous governments within the U.S. and around the world.
- 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

Boston, MA

July 2019 – July 2021

### Humana

LEAD DATA SCIENTIST - DIGITAL EXPERIENCE CENTER (XC)

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 in a 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

Boston, MA

Oct 2018 – July 2019

## 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

BIOMEDICAL ENGINEER - FRAZIER REHAB INSTITUTE

Louisville, KY

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.