

# Matthew J. Nitzken

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 machine learning, big data, predictive modeling, and data analytics. I also work on data engineering and design collaboration to bring intelligence into existing and new ideas. I have additional experience in healthcare, research, diagnostics, image processing, publications, software development, and automation.

## Skills

Python

Machine Learning

Big Data

Data Analytics

ETL

Consultation

Agile Collaboration

Test Driven Design

## Education

### University of Louisville

*Louisville, Kentucky*

DOCTOR OF PHILOSOPHY, IN ELECTRICAL AND COMPUTER ENGINEERING

*2010-2015*

- Dissertation: Shape Analysis of the Human Brain

### University of Louisville

*Louisville, Kentucky*

MASTERS OF ENGINEERING, IN BIOENGINEERING

*2009-2010*

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

### University of Louisville

*Louisville, Kentucky*

BACHELOR OF SCIENCE, IN BIOENGINEERING

*2005-2009*

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

## Experience

### DataRobot

*Boston, MA*

DATA SCIENTIST

*July 2019 – Present*

Data Scientist on the Time Series team.

- Time Series deep learning model development.
- Optimizations related to time series modeling.

### Humana

*Boston, MA*

LEAD DATA SCIENTIST

*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

*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

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

### CLINICAL ANALYTICS CONSULTANT

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

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.
- Developed a python server for simulating a sortation control server to test new systems in development.
- Created Ethernet/IP communications stack for high speed material handling applications.
- Part of a team that developed a new rigorously tested, high speed tilt tray sortation system to be deployed at multiple locations across the country.
- Large amounts of experience with troubleshooting complex existing systems and rapidly implementing fixes.
- Interactions with customers in both affirmative and difficult situations.
- Experience using Python, Rockwell Automation, TDD, and C#.

## Alliant Technologies

Louisville, KY

### SOFTWARE ENGINEER

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

### MACHINE LEARNING RESEARCHER, FOUNDER

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.

## BioImaging Laboratory, University of Louisville

Louisville, KY

### GRADUATE RESEARCHER

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

*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

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[publications.mattnitzken.com](http://publications.mattnitzken.com)