Matthew J. **Nitzken**

Senior Data Scientist · Electrical & Computer Engineer · Bioengineer

Louisville, KY

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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 — *Louisville, Kentucky*

Doctor of Philosophy (Ph.D.), in Electrical and Computer Engineering — *2010-2015*

- Dissertation: Shape Analysis of the Human Brain

University of Louisville — *Louisville, Kentucky*

Masters of Engineering (M.Eng.), 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 (B.S.), in Bioengineering — *2005-2009*

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

Experience

DataRobot — *Boston, MA*

Senior Data Scientist - Time Series — *July 2021 – Present*

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*

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 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*

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 develoing 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

Please see publications.mattnitzken.com for an up-to-date list of my publications and patents.