

# Grant Barland

Data Science, Machine Learning

(952) 242-6005

gbarland@gmail.com

[Linkedin.com/in/grant-barland](https://www.linkedin.com/in/grant-barland)

---

## EDUCATION

**UNIVERSITY OF MINNESOTA**, Minneapolis, MN

SEPTEMBER 2021 - AUGUST 2022

Carlson School of Management

Candidate for Masters of Science in Business Analytics

**UNIVERSITY OF SAINT THOMAS**, St. Paul, MN

SEPTEMBER 2015 - JUNE 2019

Bachelor of Science - Electrical Engineering- Physics Minor

Cum Laude, 3.68 GPA, IEEE member, 2018 Outstanding Research Award Recipient

## EXPERIENCE

**CARLSON ANALYTICS LAB**, Minneapolis, MN

NOVEMBER 2021 - PRESENT

Data Science Student Consultant

*Machine Learning Evaluation Research for Workforce Optimization Company*

- Developing a roadmap for an industry standardized method of automating performance evaluation forms.
- Prototyping NLP models to evaluate the effectiveness of new machine learning applications in this domain.

*Be The Match - Analysis on Ethnic Disparities in Patient Outcomes*

- Analyzed 90k patients to determine what factors contributed to adverse patient outcomes in racially diverse populations.
- Discovered opportunities for the company to intervene and improve patient transplant success rates.

*Sentiment Analysis in ML Models for Workforce Optimization Company*

- Developed an XGBoost and LightGBM machine learning model in Python to analyze 57K audio files and text transcripts from customer calls to predict the sentiment of a customer's call.
- Achieved a 75.42% improvement in predictive accuracy by incorporating audio features into the model.
- Presented findings to company management and earned a 2nd place award for thorough analysis and valuable recommendations.

**UNIFIED THEORY INC**, Woodbury, MN

JUNE 2019 - SEPTEMBER 2021

Electrical Engineer

- Integrated the Controls system for a new \$25M factory construction involving coordination between Controls guidelines for OEM vendors and field contractors.
- Managed a 4-person engineering team designing electrical power and lighting for a \$3M feed mill construction while keeping the project under budget and building strong client value.
- Mentored 2 new electrical engineers while building a standardized AutoCAD system for a client's controls engineering division.

---

## DATA SCIENCE PROJECTS

**Predictive Analytics** – Built a neural network image classifier using Keras to distinguish between images of dogs and cats. This classifier used a ResNet architecture and achieved a top 100 score in a public Kaggle competition.

**Analytics Research** – Explored and presented a report on two new Data Science tools to build a strong toolkit for future analytics work: Pandas Profiling, and Great Expectations. These libraries help streamline exploratory data analysis when working with a new dataset and help set up constraints to ensure data cleanliness.

**Cryptography Research** – Developed a QR code program featuring public-key encryption security. Studied Reed-Solomon Error Correction, Galois field arithmetic, and polynomial long division in order to write a QR encoding algorithm in Python. Published a report detailing the project outcomes, earning St. Thomas 2018 Outstanding Research Award.

**Web Development** – Designed a portfolio website to host future Data Science projects, generative art, and to learn about web development. Hosted at <https://gbarland.github.io/>

## SKILLS

**Tools:** Python, R, SQL, C, MS Excel, Pandas, Spark, Hadoop, AWS Sagemaker, S3, Snowflake

**Techniques:** Predictive Modeling, NLP, Exploratory Analysis, Statistical Analysis, Data Visualization