

# Vincent Thompson

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## SKILLS

- Python, SQL, Git, Pandas, Scikit-Learn, Hadoop, Spark, Hive, NumPy, Matplotlib, Seaborn, Plotly, Selenium, BeautifulSoup, Flask, D3.js, Dash, Streamlit, Heroku, Tableau, MongoDB, NLTK, SpaCy, Google Cloud Platform, Keras, Tensorflow, MATLAB
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## EXPERIENCE

### Metis – New York, NY

Sept 2020 – Present

- Attended a full-time, immersive bootcamp that focuses on teaching core skills used in the data science industry, building five end-to-end projects using numerous statistical modeling and machine learning techniques.

### Detecting Eye Conditions with Deep Learning

- Built a convolutional neural network with Keras/Tensorflow, trained with a GPU on Google Cloud Platform, that utilizes transfer learning to detect the existence of various eye conditions with over 90% accuracy
- Created a Flask application with a no-hassle UI for users to upload and receive predictions on their own photos.

### Nature Article Recommender

- Built a content-based recommender system for articles from the scientific journal Nature by scraping over 30,000 articles, creating a custom NLP pipeline NLTK and SpaCy to process the text data, and using non-negative matrix factorization to organize the articles into distinct topics.
- Created an interactive Dash application, deployed with Heroku, that allows users to choose from over 20 distinct topics and 130 subtopics, pick articles of interest and receive recommendations for further reading.

### Toxic Comment Classification

- Used logistic regression to train a classifier that can predict whether a social media comment falls under any of 6 different categories of abusive content, and deployed an interactive web application via Streamlit

### Predicting Critical Reception of an Album with Linear Regression

- Using data for over 3,000 albums scraped from Metacritic with Beautiful Soup and audio features collected from the Spotify Web API, built a linear regression model to predict critical reception of a new album.

### Exploratory Data Analysis of MTA Turnstile Data

- Turned unstructured data into actionable insights by performing extensive data cleaning with Python and Pandas and creating data visualizations using Seaborn and Matplotlib (I blogged about some of the visualization principles I used in this project on my [medium profile](#)).

### General Motors – TRACK Program

Aug 2018 – Aug 2020

#### CAE Engineer – Vehicle Dynamics, Loads Prediction & Controls Integration (Jan 2020 – Aug 2020)

- Constructed multibody dynamics models, conducted static and dynamic load simulations, and generated damage calculations to test new product designs and provide input on design changes for next-gen truck programs.

#### Test Engineer – Tire/Wheel Systems (Jul 2019 – Jan 2020)

- Developed and led the process for validation testing involving new wheel technology for the 2020 Corvette, and introduced high-speed camera technology to the test procedure, significantly improving measurement precision.

#### Design Release Engineer – Interiors (Aug 2018 – Jul 2019)

- Managed the release of Interior components for multiple vehicle programs through the start of regular production, collaborating cross-functionally with suppliers and GM validation team to ensure build issues were identified and mitigated in a timely fashion.
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## EDUCATION

### Duke University – Durham, North Carolina

Aug 2014 – May 2018

#### B.S.E. – Mechanical Engineering (Cumulative GPA: 3.73)

- Awards:** Deans List with Distinction: Spring 2018. Deans List: Fall 2014, Fall 2015, Fall 2016
- Relevant Coursework:** Calculus, Linear Algebra, Probability Theory, Physics, Thermodynamics, Materials Science, Fluid Dynamics, Dynamics, Control Systems, Mechatronics, Computational Methods (MATLAB)