

# Justin Tse

## CONTACT

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## EXPERIENCE

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Senior Data Scientist  
August 2020 - Current  
Data Scientist  
June 2018 - August 2020  
Button  
New York City

- Built and maintained a content based recommendation system for a series of banner advertisements that increased revenue per user by 27% and first purchase rate by 23% over the previous implementation.
- Handled the planning, setup, analysis, and automation of market-place-wide experiments. Used insights from these experiments to help determine the development roadmap and product prioritization for mobile product teams.
- Utilized Airflow, SQL, Python, JavaScript, and Golang to build out end to end ETL pipelines that transformed raw unstructured data for use in our analytics warehouses. This data was used to train machine learning models, power autonomous alerts, inform internal dashboards, and to perform ad-hoc analysis.
- Conducted self-driven data research projects; findings were later incorporated into the product roadmap.
- Responsible for onboarding new data team members on data infrastructure and the engineering stack.
- Utilized novel probabilistic and geometric techniques to analyze the statistics of longest paths in last passage percolation, a model of cluster growth.
- Programmed simulations in SageMath and C# to explore the structure of extreme rays and their connection to path probabilities.

Research Assistant  
University of Utah  
May 2016 - May 2017

## EDUCATION

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Columbia University  
New York City

Masters of Arts Statistics, 3.6 GPA  
Degree conferred December 2018

University of Utah  
Salt Lake City

B.S. Honors Mathematics, Computer Science Minor 3.9 GPA  
Degree conferred May 2017

## PROJECTS

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Twitter Based News  
Recommendation  
Apr 2018 - May 2018

- Used the Twitter API to collect Tweets indexed by news categories. Transformed the data via TFIDF and built a Support Vector Machine model to classify the category of any given Tweet.
- Built a web application that took in a Twitter username, downloaded the user's Tweets, and categorized them with the model. The application produces a graph of the user's level of interest in each category and links relevant news articles from the New York Times API.
- Used customer behavioural data to gauge customer satisfaction.
- Created a gradient tree boosting model to predict which products customers would buy in a given month.

Bank Customer  
Behaviour  
Jan 2018 - Apr 2018

## SKILLS

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Languages & Tools

Python (pandas, Airflow, numpy, scikit-learn, matplotlib, DBT), SQL, AWS  
JavaScript, R, Golang, Prometheus, Grafana, Looker, Tableau