

# Hanna Wang

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## EDUCATION

### University of San Francisco

*Master of Science in Data Science*

San Francisco, CA

July 2018 – Exp. June 2019

- Coursework: Machine Learning, Deep Learning, Natural Language Processing, A/B Testing, Distributed Computing and Data Systems, Time Series, Visualization, Data Acquisition, Bayesian Analysis, Product Analytics, Marketing Analytics

### University of Groningen

*Bachelor of Science in Business & Economics*

Groningen, Netherlands

2016 - 2018

### Fudan University

*Bachelor of Arts in Risk Management & Insurance*

Shanghai, China

2014 - 2018

## PROFESSIONAL EXPERIENCE

### Fandom, Inc. (previous Wikia.com)

*Product Team, Data Science Intern*

San Francisco, CA

Nov. 2018 - Present

- Built a pipeline of multi-label text classification to help with content recommendation for the product team and advertisement targeting for the Ads team.
- Explored features that distinguished text by unsupervised topic modeling and visualization with PCA and t-SNE.
- Leveraged transfer learning from pre-trained word embeddings and improved F-score by 10% over the TF-IDF based model.
- Built Gradient Boosting and Neural Network models, achieved a 0.2 higher F-score than the benchmark of MTurk manual labels.

### L.E.K. Consulting

*Department of Strategy, Business Analyst Intern*

Shanghai, China

Aug. 2017 - Oct. 2017

- Researched into Chinese hemodialysis (HD) service industry on multiple levels to support foreign entrance decision-making.
- Automated the data collection process using Python for keyword query searches and web crawlers.
- Forecasted market capacity in 5 years with time series models such as AR and ARMAX in R.

## SELECTED PROJECTS

### Product from Scratch - Manga Translation

- Developed a brand-new web app for manga translation and carried out market analysis on the US and global manga markets.
- Took lead of the back-end team, built a web server with Flask and organized user and image data by connection with AWS RDS and S3 databases.
- Built a model pipeline of detecting text bubbles (SSD), recognizing text from images (OCR API) and translation from Japanese to English (Google Translate API).

### In-app Purchase Prediction

- Tidied 60+G raw data provided by [Leanplum](#) into 8G dataset using bash commands and pandas SQL queries.
- Generated features on user engagement, monetization, recency and trend during each weekly time window, and selected features with a forward elimination approach.
- Predicted user purchase in 7 or 14 days based on last two months' events, sessions, and user attributes data, and achieved a 0.985 AUC score using a LightGBM model.

### Fraudulent Click Detection

- Detected abnormal users with an isolation forest from scratch and used their average depth among trees as a feature.
- Predicted click attributions with a Random Forest model, and achieved an AUC score of 0.96.

### Social Network Analysis

- Pulled Twitter data from users' public profiles and activities using a self-coded Python web-scraper.
- Performed sentiment analysis on users' posts using NLTK and deployed a web server with Flask to display the searching and analysis results interactively.

## SKILLS

**Programming:** Python (Sklern, Pandas, NumPy, SciPy, XGBoost, PyTorch, Seaborn, NLTK, Spacy, Gensim, Matplotlib, Plotly, Flask), Spark (SparkML, SparkSQL), R, C

**Database:** SQL (PostgreSQL, MySQL), NoSQL (MongoDB)

**Tools:** AWS (S3, EC2, EMR), SPSS, Tableau, html, Bash, Git, LaTeX