

# Jiawei Gu

Linkedin: <https://www.linkedin.com/in/jiawei-gu/>

GitHub: <https://github.com/jiawku>

Email: [jiawku17@gmail.com](mailto:jiawku17@gmail.com)

(469)-412-4376 Dallas, TX

---

## Education

---

**01/2017-05/2018**

**MS, Computer Science**; University of Texas at Dallas(UTD); **3.91/4**

**08/2013-12/2016**

**MS, Bioinformatic**; University of Texas at Dallas(UTD); **3.73/4**

## Relevant Coursework

---

- Artificial Intelligence • Big Data Management and Analytics • Computational Biology • Computer Vision
- Design & Analytics Computer Algorithm • Database Design • Machine Learning
- Statistical Methods in Data Science

## Proficient Skills

---

### *Computer languages*

Python, Java, JavaScript, C++, R, SAS, SQL, PHP, Bash

### *Big data framework*

Apache Spark, Apache Hadoop

### *Deep Learning Framework*

TensorFlow, Keras

### *Web stack*

MEAN stack (MongoDB, Express JS, Angular JS, Node.js), Java Spring

### *Certifications*

[SAS Certified Base & Advanced Programmer for SAS 9](#)

[edX Verified Certificate for Big Data Analysis with Apache Spark](#)

[Coursera Deep Learning Specialization](#)

## Experience

---

### **Research Assistant, Biology Department, UTD 01/2014-12/2016**

- Machine Learning Prediction for RNA-chromosome interaction, UTD
  - Wrote a **Bash script** to collect genomic and epigenomic data from **online resources**
  - Built a pipeline in Bash and python to preprocess collected data
  - Coded a **Random shuffle** program to generate negative training data set
  - Applied **SVM**(support vector machine) on collected data set to generate a model

- DNA Sequencing Analysis of Brg1 in Cancer Cell, UTD
  - Built pipelines for data process and ChIP-seq analysis using Linux bash shell
  - Implemented a protein binding motif scan and enrichment analysis program in R
  - Analyzed and Visualized data in **R** and **Python**
  - **Article publication:** Shi, X., et al. "SMARCA4/Brg1 coordinates genetic and epigenetic networks underlying Shh-type medulloblastoma development." *Oncogene* (2016).

## Academic Projects

---

### *Dog Breed Identification, Kaggle.com 05/2018*

- A Kaggle machine learning competition Project
- Design and built a **convolutional neural network(CNN)** in **keras** to determine the breed of a dog in an image (total 120 breeds)
- Applied a **integrated model** of Xception and InceptionV3 to extract bottleneck features from image
- Used three fully connected layers with **drop out** and **batch normalization** to get predicted probabilities
- Used **Adam** optimization algorithm to train the final model with **cross entropy** as loss function
- Get the final validation accuracy of 99.76%, can rank 102 out of 1286 teams

### *Facial Expression Detection, UTD 01/2018-05/2018*

- A project uses **Viola–Jones object detection framework** of **openCV** to detect the facial expression (wink and shush) from image or video
- Used the built-in face recognition **Haar Cascades Classifiers** of **openCV** to locate the face from image or framework
- Then applied the eye/mouth recognition **Haar Cascades Classifiers** to detect whether it's winking or shush on the face
- Optimized the parameters and get the final accuracy of 73% on wink and 80% on shush detection.

### *Group-User Restaurant Recommendation System, UTD 08/2016-12/2016*

- Designed and implemented a real-time restaurant **recommendation system** based on users' location
- Applied **ALS algorithm** implemented by **Spark** to predict user's preference to restaurants
- Connected to **Google Map's API** to get distance and estimate each user's travel time
- Presented a recommendation list based on **machine learning** predicted score and location

### *Boat rental database design project, UTD 09/2015-12/2015*

- Designed **EER diagram** to represent requirement of Boat rental management system
- Mapped EER diagram to relational schema by **MySQL** workbench Populated database system and coded functional procedures

### *TreasurePanning Online Auction Site, UTD 08/2017-11/2017*

- Built an online auction site with **MEAN** stack
- Coded a backend server on **Node.js** with **Express JS** framework
- Designed and implemented a frontend one page web application using **AngularJS 1.4**
- functions include user authorization, post item, bid item, wish list, bid history, send message to administrator, and an administrator account to manage/soft delete user, item and bidding
- Set a dedicated **MongoDB** server, and store everything except html in the database

### *CometSale Online Sale Site*

- a team project developed under **Agile Unified Process** development framework
  - Built an online sale system with **Java spring MVC** framework
  - Users can post their selling posts in the system
  - All the data are stored in an dedicated **MongoDB** server
-