

Claire Chang
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EDUCATION

University of California, Los Angeles (UCLA)

2016 - present

- Major: Mathematics of Computation B.S. (Expected graduation date: June 2020)
- GPA: 3.904, Dean's Honor's List 2016 - present

WORK EXPERIENCE

Software Engineer Intern, JD.COM, Cloud Computing Division, Beijing, China,

September 2018 - December 2018

JD.COM is a leading e-commerce company in China, and is ranked 181st in the Global 500

- **Project goal:** Develop a geospatial customer profiling API product that empowers clients to make business site selection decisions intelligently based on over 300 million active user's data from JD.COM
- Well communicated with clients and internal teams to identify and prioritize multiple client needs
- Designed and implemented geospatial hashing algorithms that reduced data size by a factor of 100 using Java, Scala, and PostgreSQL
- Implemented spatial clustering algorithms that predicted customers' living and working locations based on their most frequently appeared locations using Python
- Designed and engineered backend data architecture that allowed regional customer profile data to be retrieved in real time
- Implemented scripts and generated data to test API functioning and efficiency using Java and Postgis
- Above modules within overall API are currently in full production
- Represented JD Cloud Ecosystem Division to promote JD Cloud overseas at data-driven retailing technology conferences hosted by Stanford University

RESEARCH EXPERIENCE

Research Assistant, NSF REU at UCLA, Microfluidics Lab, Los Angeles, CA, USA

January 2018 – August 2018

Mentor: Prof. Marcus Roper

- **Project goal:** Detect whether and at what rate do genetically incompatible *Neurospora Crassa* spores cooperate under stressful environments
- Implemented image analysis algorithms such as template-matching, reconstruction, and edge detection that increased accuracy of spore detection from 15% to 99%
- Optimized algorithm efficiency by 300% such that an 11-hour dataset processing cycle now completes in under 3 hours
- Implemented scripts that allowed the microscope to take images at specific times in particular patterns
- Visualized results and conducted presentations upon invitation in UCLA research conferences
- Skills used: MATLAB, Python

PROJECT EXPERIENCE

Chetyris Game

April 2018

- An advanced version of Tetris that included special functioning blocks
- Heavily employed objected-oriented programming skills such as inheritance and polymorphism to construct the hierarchy of classes
- Skills used: C++

Animal Type Prediction Model, Data Mining Course Project

January 2019

- A program that predicts animal type based on physical features using decision tree algorithm
- Prediction on test data has 85.71% accuracy
- Skills used: Python (Pandas, NumPy)

Movie Rating Prediction Model , Kaggle Competition Project

February 2019

- A rating prediction model that computes user's ratings on unseen movies based on seen movies and user similarity
- Heavily utilized machine learning algorithms such as KNN, decision tree, and linear regression
- Project is ongoing, and accuracy will be updated once completed
- Skills used: Python (Pandas, NumPy)

Map Tiling Program, JD.COM, Cloud Computing Division

October 2018

- A user location grid-hashing program that produced geospatial grid-tiling map system for 331 cities in China
- Map system reduced user location search complexity to $O(1)$
- Skills used: Java, Scala, PostgreSQL

Patient Data System, Global Medical Training at UCLA

January 2016 - June 2018

- A data-driven survey system that pinpoints general patient needs in rural sites in central America
- Analyzed data and utilized results to select public health supplies to provide for particular volunteer sites
- Skills Used: Java, Excel

EXTRACURRICULAR ACTIVITIES:

- **Data System Manager/Public Health Director**, Global Medical Training at UCLA
- **President**, Guitar Club UCLA/*Parked In 4 East* band
- **Artistic Director**, Cfan Theater Group UCLA

SKILLS:

Programming Languages: C++, Java, Python, SQL, MATLAB, R, Scala, C, PostgreSQL

Others: team player, quick learner, good teaching skills, good communication and presentation skills

Citizenship: USA