Chenghao Chen

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EDUCATION

University of Southern California, *Los Angeles* **Aug 2021-May 2023**

Master of Science, Analytic in Industrial and System Engineering *GPA:4.0*

Relevant Coursework: *Predictive Analytic (Python), Data Mining(R), Machine Learning, Performance Analysis with Simulation (Arena), Linear Programming (AMPL), Data Management (SQL.*

University of Washington, *Seattle* **Sep 2016-Jun 2020**

Bachelor of Science, Electrical & Computer Engineering, controls system specializations. *GPA: 3.87*

Relevant Coursework: *Introduction to Database System (SQL), Introduction to Embedded System (C++),* Continuous and Discrete Signal Control System, *Applied Math in Building Real Physics Model (MATLAB), Computer Programming (Java)*

WORK EXPERIENCE

Data Analyst Intern at Beijing Qunar Software Technology Co. Ltd, *Beijing China* **Feb 2021-Jun 2021**

Optimized recommendation system with SQL

- Monitored and visualized websites' daily metrics to explore key features affected potential recommendation performance.
- Extracted and analyzed user data from user's database with more than **500 million** rows using **MySQL** and provided the operation team with quantitative insights on user's recommendation optimization.
- Developed an information flow recall model independently that ranked attractions of cities in China with **SQL** and utilized the **A/B test** to test the model. The new recall model increased **click-through rate (CTR)** of information flow page by **9.3%.**
- Optimized the Point of Interest Pages for traveling by **content-based recommending system** with **SQL** and Python and increased **click-through rate (CTR)** of the Point of Interest Page by **11.4%.**
- Participated in the Qunar Partner Operation plan involved in connecting potential business partners and communicating with the marketing staff and providing data support.

PROJECTS

Research in error analysis and reduction in robotic at Bright Machine Software Company, *Seattle* **Jan 2020-Jun 2020**

- Investigated in error analysis and reduction method in small-scaled uArm robotics utilizing **Python**, with intent to design robust methods that can be scaled to large industrial machines**.**
- Led a team of **3** people in group project by planning milestones and reporting phased results to managers.
- Deployed **3** measurement schemes to collect data and calculate errors, including Grid Intersection test, Random Point test and Single Point test.
- Performed error analysis in robotic arms and used **Linear Regression model** to fit the data.
- Reduced total mean error by **57.5%** in Grid test, and **60.5%** in random test.

Research in Covid-19 vaccines distribution and allocation system of Healthcare Industry, Los Angeles **Oct 2021-Dec 2021**

- Created a case study for CVS's covid vaccine allocation and distribution system. The objective was to allocate vaccines to different age groups and minimize the cost function, which is the overall illness of covid-19.
- Built a real-world simulation model with five ages groups and utilized **Random Mutation Hill Climbing algorithm** to distribute vaccines.
- Reduced **30%** of the overall illness of covid-19 in the simulation model.

RESEARCH EXPERIENCE

Research Member in Bio-Robotics research Lab at University of Washington, *Seattle* **Jan 2019–Jul 2019**

- Conducted robotic and neurosurgical instrument segmentation for development of intelligent surgical assistant, which helped track surgical instruments autonomously during procedures.
- Edited neurosurgical video into frame-by-frame pictures and annotated surgical instruments using **OpenCV**.
- Worked on a custom U-net architecture algorithm for identifying surgical equipment using **machine learning** and **computer vision**.

SKILLS

Programming Languages: Python, MySQL, R, Arena, MATLAB, Java, and AMPL.
Statistical Models: Linear Regression, Logistic Regression, Stochastic Process, A/B testing, etc.
Visualization Tools: R, Python, Microsoft Excel, Tableau.
Machine Learning: SVM, Random Forest Tree, Clustering, Neural Network, etc.
Tools/Framework: TensorFlow, Spark.