Los Angeles, California
cybsbbb.github.io

YUANBIN CHENG

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EDUCATION

University of Southern California   **Los Angeles, CA**   **Jan. 2017 – Dec. 2018**
* **M.S. Computer Science, GPA: 3.56/4.0**

University of Science and Technology of China   **Hefei, China**   **Aug. 2012 – Jun. 2016**
* **B.E. Computer Science, GPA: 3.42/4.0, Top 20%**
* Excellent Graduate Student (Honors)

PUBLICATION

* **Yuanbin Cheng**; Yao-Yi Chiang. **Automatic Intersection Extraction and Building Arrangement with StarCraft II Maps.** 2018 In 26th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems, Student Research Competition.

* Xin Yu, **Yuanbin Cheng**, Yijun Lin, Fan Pan, Yao-Yi Chiang, and Dimitrios Stripelis. **MAPINS: An intra-city PM2.5 modeling web application using a scalable data management and analysis system integrating public multi-source data.** In 2018 UCGIS/AutoCarto, pp. 132-134, Madison, WI, USA.

ACADEMIC EXPERIENCES

Teaching Assistant   **Los Angeles, CA**   **Jun. 2018 – Dec. 2018**
USC Graduate Level Course INF553 "Foundations and Applications of Data Mining"
* Responsible for designing and producing assignments, helping students, and grading assignment
* Designed and held Recommendation System Competition for the course

Research Assistant   **Los Angeles, CA**   **Aug. 2017 – May. 2018**
Spatial Sciences Institute (SSI), University of Southern California,
Project on Mining Public Datasets for Air Quality Prediction
* Implemented a data-mining approach to generate an expert-free method to predict $PM_{2.5}$
* Built a system that integrate data acquisition, pre-processing, modeling, prediction, and visualization
* Developed web service and related front end to visualize large scale data with Bootstrap, PHP, and MapBox

WORK EXPERIENCES

Intern, Inspur International (C#, JS, HTML, CSS)   **Jinan, China**   **Jun. 2017 – Aug. 2017**
* Worked as the software developer for Deposit Management System
* Completed the user interface and homologous backend of the Query and Payment System

Intern, Hefei High-Dimensional Data Company (C++)   **Hefei, China**   **Jul. 2015 – Feb. 2016**
* Built a file system based on image steganography and encryption algorithm
* Built an index system for hiding split files separately in various images

PROJECT EXPERIENCES

Reinforcement Learning Agent for StarCraft II   **Jun. 2018 - Now**
* Implement DQN (Deep Q Network) on pre-defined states and actions in game environment
* Combine several cell actions to a hierarchical structure to reduce the problem space
* Design several mini-game scenarios with limited units to explore specific micro strategy
* Achieve high win-rate beat the hard difficulty in-game AI

Deep Learning Model for Digital Map Text Detection   **Mar. 2018 – Now**
* Implemented GAN between coordinate corresponding GB1900 and Google Map images to generate labeled data.
* Trained a convolutional neural network that can detect the text label over the map
* Used Tesseract 4 to recognize the text from trained text detection model result

Yelp Comments Sentimental Classification   **Sept. 2018 – Dec. 2018**
- Labeled the Yelp review data depend on the stars and human review to positive, negative, neutral
- Reconstructed the review by extracting the order of top 5000 frequent unigram, bigram, trigram words
- Built a two layer LSTM model for review sentimental classification, which achieved 0.8 F1 score

Restaurant Recommendation System Competition   **Sept. 2018 – Dec. 2018**
- Built a hybrid recommendation system combined Collaborative Filtering, Text Classification, Community Detection.
- Achieved RMSE = 0.95 on yelp dataset, comparing to a Model-based CF with RMSE = 1.12

Kafka System Construction and Performance Testing   **Feb. 2016 – Jun. 2016**
- Constructed a message processing system over eight servers cluster based on Kafka, Spark, Hadoop
- Integrated Kafka as the message queue over the cluster system to combine different data sources
- Achieved high throughput that tested by the simulated large amount streaming data

News Search Engine   **Apr. 2015 – Jul. 2015**
- Developed a web crawler to get news data from the SINA news
- Integrated NIPIR which is a Chinese tokenizer with Lucene to realize a news-related search engine
- Built a News Recommendation System based on user search history

LANGUAGES AND TECHNOLOGIES

- Languages: C/C++, Java, Python, Scala, R, SQL, HTML, JavaScript, CSS, Bootstrap, PHP, Node.JS
- Technologies: MySQL, MongoDB, Postgres/PostGis, Hadoop, Spark, AWS EC2, Tensorflow, Keras, OpenAI Baseline

HONORS AND AWARDS

- ACM SIGSPATIAL Student Research Competition, 3rd Place Award   **Nov. 2018**
- National Science Foundation Sponsored Student Travel Awards, ACM SIGSPATIAL Conference **Nov. 2018**
- University of Science and Technology of China "Outstanding Graduate"   **Apr. 2016**
- University of Science and Technology of China Scholarship, 3rd Class (Top 25%)   **Oct. 2015**
- University of Science and Technology of China Scholarship, 3rd Class (Top 25%)   **Oct. 2014**
- University of Science and Technology of China Excellent Student Cadre   **Oct. 2013**
- University of Science and Technology of China Scholarship, 3rd Class (Top 25%)   **Oct. 2013**
- National Mathematical Olympiad in Senior, 2rd Class   **Oct. 2011**
- National Mathematical Olympiad in Senior, 3rd Class   **Oct. 2010**

VOLUNTEER ACTIVITIES

- Volunteer in helping the disabled children in Hefei Rehabilitation Center for disabled children **Ang. 2015**
- Volunteer in helping the children in poverty in rural as a teacher   **Aug. 2014**
- Commissary in charge of studies in organizing a variety of class activities through undergraduate study **2013**