Ding Li

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EDUCATION

Sept. 2016 - present **University of Southern California**, Los Angeles, California **(GPA 3.92/4)**

- **M.S. of Computer Science** and **Ph.D. of Biomedical Engineering**. (Expected by May 2021)

Sept. 2010 - Jun. 2014 **Huazhong University of Science and Technology**, China Bachelor of Science **(GPA 3.79/4)**

COMPUTATIONAL SKILLS

Programming & Scripting: Java, C/C++, Python, JavaScript, PHP, Swift, HTML/CSS, R, Linux Shell, SQL

Frameworks: Tensorflow, Keras, OpenCV, Bootstrap, JQuery, Angular 7, React, node.js, OpenMP, OpenGL, CUDA

RESEARCH EXPERIENCES

Sept. 2016 - present **Research Assistant, University of Southern California,** Los Angeles, California

- Developed computational models to solve pharmaceutical problems using numerical simulation
- Performed parallel scientific computing in MPI, OpenMP, and CUDA, and visualized results with OpenGL
- Implemented numerical optimization through quasi-Newton method and particle swarm optimizer
- Published three works in peer-review journals and presented works at three national conferences

May 2015 - Sept. 2015 **Bioinformatic Engineer, Novogene Inc.,** Beijing, China

- Tested various unsupervised machine learning model based denoising techniques on single-cell RNA-seq data
- Liaised with three other team members for three months and developed a new analysis pipeline for the company

SELECTED PROJECTS

Aug. 2019 - present **Deep Learning: Improving object detection with thermal and visible light imaging data**

- Liaise with four other team members to develop novel method of object detection with deep learning
- Testing the Mask-RCNN and deeplabV3 system with our thermal and RGB imaging data

Jan. 2018 - present **Machine Learning: Gene Sequencing Data Analysis and Tumor Image Generation**

- Analyzed gene sequencing data with a Hidden Markov model (HMM), parameterized model with expectation-maximization (EM) algorithm, and implemented classification with K-Means and Support Vector Machine (SVM)
- Participate in writing a review about using generative adversarial networks (GANs) and multi-task learning (MTL) networks to address tumor image analysis problems

Jan. 2019 - May. 2019 **Web Application and Web Services Development: Product Search Website**

- Developed a product search website with sharing function using RESTful APIs from Ebay, Google and Facebook
- Implemented the client-side with Angular 7 and used Bootstrap for responsive web design
- Built the back-end program with node.js and PHP, used AJAX and JSON for communication
- Website is deployed on AWS service: hw8-productSearch.us-east-2.elasticbeanstalk.com

Jan. 2016 - Apr. 2016 **System Implementation: Relational Database Construction**

- Implemented the Record/Page management, buffer manager, file sorting with TPMMS, B+ tree, SQL semantic checking and relational operations in C/C++, and connected pieces into a functional database

Sept. 2015 - Dec. 2015 **Object-oriented Programming Practice: Multi-Teams Competitive Game Design**

- Built a flexible and scalable chatroom application in Model-View-Control (MVC) structure in Java
- Created a hunt down game involving a competition of multiple teams with extending chatroom function