

KAICHI XIE

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www.github.com/kcxie/ | Computer Science M.Sc. Applicant to the University of British Columbia

Education:

University of California, Davis

B.S. in Computer Science

Cumulative GPA: 3.457/4

Davis, CA

Sept 2015 - June 2019

Technical Skills:

Programming Languages: Java, C, Python, R, MySQL;

Technologies: Spring, Kubernetes, Docker, Linux, Pandas, Matplotlib, Numpy, Tensorflow, Keras, Scikit-learn, PyTorch, Hugging Face ;

Research Experience:

The Zhang Laboratory at UC Irvine

Irvine, CA

Research Assistant

July 2022 - present

- Implementing a hierarchical representation learning algorithm for the detection of causal genes to human disease; graph algorithms incorporated: **Graph Convolutional Network, graphSAGE, GraRep, DeepWalk, and Louvain** Community Detection.
- Building a pipeline for data preprocessing of gene expression data of 21 human cells.
- Generating detailed reports comparing changes in gene representations between patients with 3 different mental disorders and the control.
- Post-processing and Performing **UMAP**, a dimensionality reduction technique, on hierarchical graph representations and visualizing results.
- Paper (unpublished) :
iHerd: Integrative Hierarchical Graph Representation Learning Algorithm for Causal Gene Prioritization in Disease

UC Davis Computer Science & Genome Center

Davis, CA

Research Assistant

Aug 2022 - present

- Leading a research project of extracting chemical concentration values of food from biomedical literature using **natural language processing** techniques.
- Designing data formats and methodology for using **named-entity recognition** and **relation extraction** language models for chemical concentration values extraction.
- Creating and annotating datasets of life science articles from PubMed for both models with Label Studio.
- Currently training and evaluating **BioBERT**-based models for both tasks.

Professional Experience:

Huawei Technologies Co., Ltd

Guangdong, China

Full-time - Software Engineer

Mar 2020 - Nov 2020

- Developed a PaaS for Artificial Intelligence(AI) and Machine Learning(ML) models that automates pipelines for model management, deployments with cloud scalability, and customization for model retraining and evaluations.
- Built microservices with container (Kubernetes) and serverless architectures using Spring, Tomcat, and Docker, and implemented APIs for communication with Cloud Computing services.
- Tested products with QA engineers, Front-end engineers, and AI/ML engineers.

UC Davis Center for Integrated Computing and STEM Education

Davis, CA

Intern - Engineering Lab Assistant

July 2018 - Feb 2019

- Tested robot kits, and re-designed components to create demonstrative programs for the robotics and physical computing hardware and software curriculum for K-14 computing and STEM education.
- Employed Raspberry Pi and Arduino devices to design 20 demo projects and wrote source libraries in C for robots to draw customized geometric shapes and alphabets.

Certificates:

IBM Data Science - IBM(Coursera) - 2021

Google Data Analytics - Google(Coursera) - 2021

Machine Learning - Stanford University(Coursera) - 2022

Deep Learning Specialization - DeepLearning.AI (Coursera) - 2022