KAICHI XIE

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Education:

University of California, Davis
B.S. in Computer Science   Davis, CA
Cumulative GPA: 3.457/4   Sept 2015 - June 2019

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➢ Paper (unpublished) :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.

Technical Skills and Certificates:

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

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

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