Yifeng He

CONTACT INFORMATION

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EDUCATION

University of California, Davis, Davis, California, USA 08/2019 – present

- **Anticipated degree:** B.S. in Computer Science & Applied Mathematics
- **GPA:** 3.887

RESEARCH

Computer Security Lab at UC Davis 10/2022 - present

- Work with PhD student members and Prof. Hao Chen on the frontend of language embedding and clustering
- Find the compile error message, analyze and categorize the error reasons
- Create a data preprocessor to modify the POJ-104 dataset by syntax and semantic rules of C++
- Find suitable Input-Output (IO) pairs to represent the characteristics of compilable programs by fuzzing
- Vectorized the IO pairs to embedding vector for model training
- Train BERT model on IO pairs and then use trained BERT for clustering

Path Academics 02/2022 - 07/2022

- Conducted research on neural network and its application in AI under the supervision of Prof. Pavlos Protopapas from Harvard
- Attended workshops on gradient descent algorithm, neural network optimizers, regularization of neural network, and other related concepts and architecture
- Analyzed and compared models of deep learning algorithms application,
- Made automatic differentiation to activation functions by hand, visualized receptive fields through max-pooling
- Composed independently the research paper for the IEEE international conference

INTERNSHIP

ByteDance 04/2021 – 08/2021

Software Engineering Intern, Income Platform Team

- Used microservice tech to connect parts of the author income settlement bushiness
- Transformed author-relation data architecture design from relational database (SQL) to graph database (Gremlin) to allow better efficiency for the business model
- Refactored the income calculation control process with visitor design pattern using Python 3

Xigua Video 05/2021 – 06/2021

Software Engineering Intern, Author Experience Team

- Created a data cleaner script with ORM to maintain the size and readability of online data settlement table
- Created the offline flow of Medium Video Encouragement Project for weekly data calculation
- Built the interface for frontend of web and mobile app to display the data visualization

PROJECTS

CourseReco 06/2022 – 09/2022

- Designed the overall system architecture
- Led the programming for API server and recommender engine
- Negotiated with the third-party provider, SchedGo, for data service
- Provided technical leadership to teammates

Music Genre Classifier 05/2022 – 06/2022

- Processed music samples into spectrogram by Short-time Fourier transform
- Designed the appropriate model (CNN) to classify spectrograms into category
- Analyzed the resulting model and test outputs with saliency maps

ImageOrientation 03/2022 - 04/2022

- Pre-processed image data by rotating them with random generated angles, and assigned these angles as label
- Designed the appropriate CNN for regression task, tested and improved the model
- Applied Hyper-parameter tuning based on train, validation, and tested results

Dcash-server 05/2021 - 07/2021

- Created a multi-threaded API server using C++ to allow users to create accounts to make deposit and transfer
- Used MySQL to store and maintain user data
- Made API calls to the Stripe API server to handle credit card information

Genshine Impact Gacha Analyzer 08/2021 - 09/2021

- Designed fetching process of gacha data from MiHoYo and categorized the process
- Stored data into local database automatically, wrote into excel for data analysis by option
- Generated text or graph visualization report from data analyze results

ACTIVITIES

HackerHub Club, UC Davis 07/2020 - present
Co-founder, President, Technical Officer

- Design and maintain a course recommendation system, CourseReco, for UC Davis students
- Organize and lead the Code Jam Competition on data visualization, AI, augmented reality and virtual reality, and machine learning
- Coach in introductory programming workshops, including Assembly, functional programming, recommender system, generative adversarial network, etc.

HONORS AND AWARDS

Dean's Honor List, Fall 2019, Spring 2020, Spring 2021, Spring 2022

PUBLICATIONS

He, Yifeng, *Big Data and Deep Learning Techniques Applied in Intelligent Recommender Systems*, ICCASIT 2022.