YUAN YAO

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EDUCATION

University of Michigan, Ann Arbor   **Michigan, USA**

B.S.E in Computer Science   *GPA: 3.96 / 4.00*

Coursework: Operating Systems (A), Web Systems (A), Machine Learning (A), Data Structure and Algorithm (A), Computer Organization (A), Linear Algebra (A+)

Shanghai Jiao Tong University UM-SJTU Joint Institute   **Shanghai, China**

B.S.E in Electrical and Computer Engineering   *GPA: 3.70 / 4.00*

Coursework: Electronic Circuits (A+), Analog Circuits (A), Intro to Computer and Programming (A), Intro to Engineering (A), Engineering Probability and Statistics (A+)

RESEARCH EXPERIENCE

Consistency Analysis of Data Usage Purposes in Mobile Apps   **Ann Arbor, MI**

Research Assistant, Real-Time Computing Laboratory directed by Kang Shin   *May 2020 - Present*

- Detected inconsistencies and contradictions of data usage purposes in Mobile Apps

- Worked with a PhD student and produced paper submitted to USENIX as 2nd author (currently under review)

- Built a crawler to collect a list of more than 1 million app ids from Google Play Store

- Built a system that captured more than 2 million traffics from over 20k android apps, classified the purposes of the collected traffics

- Built a webserver to monitor the status of the system and perform keyword search on the results

Connecting high-resolution 3D chromatin organization with epigenomics   **Ann Arbor, MI**

Research Assistant, Liu Lab directed by Jie Liu   *Jan. – Sept. 2020*

- Used deep learning model to learn a mapping function from epigenomic features to 3D chromatin organization

- Worked with a PhD student and produced manuscript submitted to Nature Communications as 2nd author (currently under review)

- Built a data pipeline to collect, pre-process and impute epigenomic data

- Built a web system Chromosomal Structure And Epigenomics Analyzer (CAESAR) using Python Flask

- Website hosts and visualized a model called Nucleome Browser, allowing concurrent users to calculate attributions and see results in real-time

Decentralized Web Archive & Image Storage   **Ann Arbor, MI**

Research Assistant, with Harsha Madhyastha   *May 2020 - Present*

- Designing in ongoing research for a new web architecture to fetch identical image copies from alternative sources and store image data in a decentralized web archive

- Implemented tree-match algorithm to detect near-identical web pages

PROJECT EXPERIENCE

We Yue Technology   **Remote**

Web Developer Intern   *Dec. 2019 - March 2020*

- Developed an educational game on android platform using Android Studio which is able to communicate with the backend server, update contents, and upload results in real time

- Worked on full-stack website development for an administration system using Bootstrap, MySQL and Python flask; developed features including login, authorization management, and data management

China Telecom Changzhou Branch, Cloud Department   **Changzhou, China**

Product Management Intern   *Jan. 2019*

- Gathered and compiled product information on cloud services including Alibaba Cloud, Tencent Cloud, AWS, and Azure, provided insight for service plan decisions

- Participated in customizing cloud service plans for clients; proposed customized cloud service topologies

Paper Bridge Crane Project   **Shanghai, China**

Team Leader & Programmer   *May - July 2018*

- Programmed and calibrated parameters using Arduino to read data from grey scale sensors and control multiple motors to lift a robotic cart and drop payloads; won 1st place in the school competition

- Designed the schematics behind the load-bearing paper bridge and the robotic crane-cart

Automatic Screen Protector Attachment Machine   **Shanghai, China**

Team Leader & Programmer   *July - Aug. 2018*

- Created a procedure with Arduino that attaches screen protectors onto smartphones; programmed the motors to clean the surface of the smartphone screen, fetch the screen protector, align the protector sheet with the smartphone screen, and put pressure on the screen cover to complete the attachment

- Created 3D-printing models with SketchUp and built a machine that can automatically attach screen protectors to smartphone screens; solved the problem of alignment and cleanliness in the setup

PUBLICATIONS

- Duc Bui, **Yuan Yao**, Jongmin Choi, Junbum Shin, Kang G. Shin, "Consistency Analysis of Data Usage Purposes in Mobile Apps" *(under review at USENIX)*
- Fan Feng, **Yuan Yao**, Xue Qing David Wang, Xiaotian Zhang, Jie Liu, "Connecting high-resolution 3D chromatin organization with epigenomics" [link] *(under review at Nature Communications)*

SKILLS

Programming and Scripting Languages:

Python, C/C++, Java, JavaScript, MATLAB, Verilog HDL

Professional Software and Framework:

Android Studio, Origin, Mathematica, SolidWorks, LaTeX, PyTorch, Django, Bootstrap