

RUOWANG (JACKIE) ZHANG

+1 734-263-4593 (US) | +86 136-8174-8368 (China) | jackierw@umich.edu
<https://www.linkedin.com/in/jackie-zhang-umich/> | <https://github.com/ReactiveXYZ-Dev>

EDUCATION

University of Michigan Ann Arbor, MI
(Incoming) M.S., Computer Science & Engineering May 2022 (Expected)

- Research interest: Software Defined Networking, Distributed/Data-intensive Systems, High Performance Computing
- Funded program. Transferrable to PhD program
- Advisor: Prof. [Morley Mao](#)

University of Michigan Ann Arbor, MI
B.S., Computer Science & Data Science Sep 2016 - May 2020

- **GPA:** 3.765 / 4.0 (Distinction in LSA term, Summa Cum Laude in CoE term)
- **Selected courses:** Database Management Systems, Compiler Construction, Operating Systems, Machine Learning, Computer Security, Computer Vision, Computer Networking, Multidisciplinary Software Development, Data Mining
- Selected to Multidisciplinary Design Programs for 6 consecutive semesters as research assistant (~15% acceptance rate)
- Program organizers/participants in MPowered Entrepreneurship, MHacks, ArborHacks etc

WORK EXPERIENCE

Databricks, Inc Remote (COVID-19)
(Incoming) Software Engineer Intern (Backend) Jun – Sep 2020

- Joining the Spark Environment team to maintain, improve and streamline Databrick Runtime releases over time

Hulu, LLC Santa Monica, CA
Software Engineer Intern (Backend) Jun – Sep 2019

- Fixed critical memory leaks of an internal data generator, which increased uptime by **30x and counting**
- Enabled detailed introspection into a critical cache module which could "save **hours** of debugging time"
- Overhauled the cache module with AWS S3 integration, more data sources and advanced **memory control**
- Proposed wide-scale architecture changes that utilized multiple teams and received **architect-level** attention
- Gave tech talks in an internal conference and participated in building a web **accessibility** toolkit in the annual hackathon

Alibaba Co. Ltd – Enterprise Intelligence Dept. Hangzhou, China
Software Engineer Intern (Full-stack) Apr – Jun 2019

- Revamped the prototype of Alibaba's next generation visual site builder & simulator
- Authored a 2-way code/UI syncing mechanism using **syntax and semantic analysis**
- Joined force with the framework team to craft a **brand-new** web templating language for visualization purposes
- Integrated the site builder with the department's Cloud IDE ecosystem (est. **30k+** users)
- Recommended as **senior software engineer** (P6) after the internship due to demonstrated performance

Beyond Remarkable, LLC Remote
Software Engineer Contractor (Backend) Jun 2017 – Jun 2018

- Developed the web backend for its instant messaging mobile application

- Integrated with EaseMob and S3 APIs to enable various IM and video streaming functionalities
- Enabled data replication and distributed load balancing between servers in US and China to decrease request latency

SoffeeDesign, Inc

Dallas, TX

Product Manager Intern (Full-stack)

May – Sep 2017

- Recruited and managed a team of 4 professional developers using an agile workflow
- Co-designed the E-Commerce web system with inventory, sales and staff management
- Aired the product **3 weeks** earlier than anticipated with **20%+** remaining budget

Crytek, GmbH

Shanghai, China

Software Analyst Intern

Jun – Jul 2015

- Analysed design strategies from competitor’s games and generated detailed reports to the creative director
- Assisted in generating API documentation and unit tests for CryEngine in C++

Wise Earth Property Group

Melbourne, Australia

IT Intern

Jun – Jul 2013

- Built a CMS web application for the company to manage its property listings
- Organized and categorized multi-media contents for the company

ENTREPRENEURSHIP EXPERIENCE

Backyard Parking - “Airbnb” for parking lots

Ann Arbor, MI

Co-founder & CTO

Jan 2017 – Mar 2018

- Enabled the product to be successfully acquired (it is now “**Parqyt**”)
- Led the full-stack development of the SaaS platform and managed up to 3 student developers
- Integrated crowd-sourcing technology to achieve **14x** user acquisition than that before the integration

ReactiveXYZ – Web and app development studio

Melbourne, Australia

Founder

Jan 2015 - Present

- Managed up to 5 student developers from Australia and US using an agile workflow
- Hosted **10+** sessions tutoring high school and college students to utilize coding to generate their own impact
- Led and delivered **20+** web/app projects to production, clients including but not limited to:
 - StudioHawk (<http://www.studiohawk.com.au/>)
 - Elite Admissions (formerly 51UStudy) www.elite-admission.com
 - Wise Earth Property Group <http://www.wepg.com.au/>
 - AIM Health Medical Clinic <http://www.aimhealth.com.au/>

RESEARCH & DEVELOPMENT EXPERIENCE

Mobile & Network Lab

Research Assistant to Professor [Morley Mao](#)

Jan 2020 - Present

- Working on a new generic SDN architecture powered by a **data-driven** approach
- Researching and building common virtualized network functions (firewall, telemetry etc.) using **P4 and P4 runtime**
- Creating a programming framework to enable high-throughput data communication using a **PubSub** model and flexible data manipulation using the **ReactiveX** paradigm, for general cyber-physical applications
- Implementing a generic traffic migration framework for industrial deployment (e.g. for AT&T) using BESS

GEMS Lab

Research Assistant to Professor [Danai Koutra](#)

Mar 2017 – Mar 2018, May 2020 - Present

- Joined force to create a **collaborative** visualization tool for large-scale graph data
- Implemented the web system that supports uploading, visualizing, manipulating and sharing large-scale graph datasets
- Integrated with the backend **Apache Spark pipeline** with a pub-sub interface via Redis
- Deployed the web application and computing pipeline to Azure clusters
- Overhauling the codebase for the internal graph algorithms for production use

Chi77 MDP

Data Engineer at Together Chicago (subsidiary of Dillon Kane Group)

Dec 2018 – Dec 2019

- Implemented the web backend application for Together Chicago's asset mapping tool
- Researched and developed an automated and extendible data fetching pipeline using **ETL** concepts
- Authored a **simple query language** to allow uniformed fetching of heterogenous datasets

Database Research Group (NSF funded)

Research Engineer & Summer Intern to Professor [Barzan Mozafari](#)

Mar 2018 – Mar 2019

- Led the frontend/API team (3-4 developers) to build a new travel planning engine with a declarative query language
- Overhauled the codebase to fix bugs, implement new features and increase maintainability; reduced codebase size by **30% (est. 90k lines of code)**
- Built a complex abstraction that supports transforming and manipulating over 20+ different user web interactions into data structures readily solvable as a CSP by commercial solvers (**est. 10k lines of code**)

Secure Cloud Manufacturing MDP

Research Assistant to Professor [Kira Barton](#)

Dec 2017 – Dec 2018

- Worked on a rule-based anomaly detection framework for a manufacturing environment communicated via **Ethernet/IP and Common Industrial Protocol** by performing packet inspections on the network traffic
- Implemented a **hybrid machine learning** module which predicts test-bed machine statuses based on output from the digital twins as well as network traffic

Secure Mobile Communication MDP

Research Assistant to Professor [Robert Dick](#)

Dec 2016– Dec 2017

- Worked on an iOS microblogging application powered by a P2P Wi-Fi-based adhoc network
- Analysed feasibility to implement such approach by benchmarking power consumption of the app
- Added infrastructure (web server) mode as a fallback when internet is available and messaging latency is high

PUBLICATIONS & POSTERS (*: *in submission*, †: *equal contribution*)

- * Yikai Lin, **Ruowang Zhang**, Efe Balta, Xiao Zhu, Jianbin Zhang, Kira Barton, Dawn Tilbury, Z. Morley Mao. SDNator: Enabling Extensible Data-Driven Control in Cyber-Physical Systems. *USENIX OSDI 2020*.
- Yuru Shao, **Ruowang Zhang**, Andrew Ramacher, Kira Barton, Z. Morley Mao. Context-Aware Intrusion Detection in Smart Manufacturing Systems. *MIDAS Annual Symposium 2018*. ([PDE](#) available)
- Jin, D.; Leventidis, A. †; Shen, H. †; **Zhang, R.** †; Wu, J.; Koutra, D. PERSEUS-HUB: Interactive and Collective Exploration of Large-Scale Graphs. *Informatics 2017*, 4, 22.

PROJECT REPORTS

- Leyang Wen †, Haoran Xiao †, **Ruowang Zhang** †, Yan Zhang †, Yue Zhang †. Interpreting Hand Gestures Using Smartphone Dual-Lens Cameras. *EECS442 Fall 2019*. ([PDE](#) available)

- Hristo Dakov †, **Ruowang Zhang** †. Discover Cross-time Patterns From COVID-19 Academic Articles Using Clustering. *EECS476 Winter 2020*. ([PDF](#) available)

AWARDS & HONORS

- University Honors, 7 semesters
- James B. Angell Scholar
- EECS 183 Grand Final Price Winner (1 out of 20+ teams)

CERTIFICATIONS

- Big Data Specialization (offered by UCSD), **May 2020**, *Coursera*
- Cloud Computing Specialization (Transferrable to UIUC's OMSCS program), **Apr 2020**, *Coursera*
- Deep Reinforcement Learning Nano Degree, **Sept 2019**, *Udacity*
- Artificial Intelligence Nano Degree with Computer Vision specialization, **Aug 2017**, *Udacity*
- Certified iOS developer, **Nov 2014**, *EDUMobile Academy*

OTHERS

Languages: English (Professional), Mandarin (Native), Cantonese (Limited), French (Beginner)

Technologies: C++/Java/Python/Go/Swift/Objective-C/P4, Spring/Django/Flask/Laravel/React/Angular/Vue, Tensorflow/Pytorch, MySQL/Mongo/Cassandra/Redis, Kafka/Celery/RabbitMQ, Hadoop/Spark/Storm, Docker/Kubernetes

REFERENCES

Available upon request.