Ziliang(Johnson) Zhang

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Research Interest

- Pushing frontier in the Embedded System with focus on Real-Time System, Cyber-Physical System, Internet of Things and Micro-Controller.
- Exploring Machine Learning and Deep Learning in the context of edge devices with hard constraints.
- Implementing state-of-art research with the scope of Human-Computer Interaction Design Space.

Education

Doctor of Philosophy (On-Going), Electrical and Computer Engineering
University of California, Riverside   Sep 2022 - Present
Computer Engineering, Master of Science
University of California, Riverside   Sep 2019 - Mar 2021
Cognitive Science with Specialization of Human-Computer Interaction, Bachelor of Science
University of California, San Diego   Aug 2015 - Mar 2019

Research Experience

OpenRPT: Open Remote Physical Therapy   Sep 2020 - Mar 2021
Lab researcher @ Extreme Storage and Computer Architecture Lab, University of California, Riverside
- Developed a Complete Human-Computer Interaction prototype using Coral DevBoard and wearables display to perform pose estimation support and deliver output in 720p 30fps videos via teleconferencing software.
- Conducted actual testing with trainer and improved based on the feedback in accessibility and usability. Optimized based on Bluetooth PAN propagation to achieve one-step operation for users.
- **Tensorflow Lite, Bluetooth PAN, OpenCV, PoseNet Package, UNIX operations, Cython**

"On Construction and Application of High-Definition(HD) Maps"   Sep 2020 - Dec 2020
Co-author, editor @ University of California, Riverside
- Compiled paper on HD Maps construction and application. Analyze different approaches in HD Maps construction and how they have been applied to the industry. Constructed the overall taxonomy for the paper
- Honorable project recognized by Dr. Amr Magdy. Submitted to SSTD'21 (17th International Symposium on Spatial and Temporal Databases)
- **Cloud Point Diagram, High-Definition Map, Localization**

When2Buy Co-op Smart Shopping List   Jan 2018 - Mar 2018
Lead Developer @ University of California, San Diego
- Developed the **WebApp** to create a sharable shopping list that is capable of appending periodic items to the list to reduce cognitive load of all participants. Tech used: **HTML/CSS/Javascript, Node.js, Sketch, Google Analytics**
- Programmed the Shopping List's Database in **Firebase**, main sharing functionality and add item functionality

Professional Experience

Full-Stack Software Development Engineer @ Verizon   Feb 2022 - Sep 2022
- Developed and Maintained **RESTful API** in **Spring Framework** and **Maven** Project, with **AWS** and **Apache Kafka**
- Worked on **Angular**, **Typescript**, **HTML/CSS/Javascript**, **Node.js** frontend and connected to backend and **Redis**
- Experienced in **Junit**, **Jenkins**, **Postman** and **JIRA** for Testing, Used **Git**, **Docker** as **CI/CD** process for **TDD**

Java Full-Stack Developer @ Marlabs, Inc.   Jul 2021 - Feb 2022
- Provided Professional Solutions in developing **SOAP** and **RESTful API**. Clients include Hilton, Vertafore, etc.
- Implemented both **SQL** (MySQL, PostgreSQL) and **NoSQL** (MongoDB, Firebase) database in **ORM** with **Hibernate**
- Understood **SDLC** based on **Agile/Scrum** and **Waterfall** methodologies. Experienced **Pair/Extreme** Programming

Frontend Designer and Developer @ Bidround System LLC   Jun 2018 - Sep 2018
- Designed UI interface with **Sketch** and **Figma**. Improved UX with **Prototyping**, **A/B Testing** and **Google Analytics**
- Developed Frontend with **Node.js**, **REACT** and **Bootstrap**. Experienced in Swift for IOS development
- Used **Sketch** to create interactive low/high fidelity prototypes that are more natural to users' cognition flow.
- Conducted A/B testing with old App Interface and achieve clear improvement with new design.

Teaching and Volunteering Experience

Teaching Assistant @ University of California, San Diego   Sep 2018 - Mar 2019

Teaching Assistant @ University of California, San Diego
- Programmed educational python and java educational material in Coursera and Stepik for 200 students.
- Conducted weekly meeting with team and Developed tasks accessible for all levels by using scratch 2, Alice 3 and codingBat.
- Supervised by Dr. Beth Simon, and followed her education in computing thinking from EDS124BR, UCSD

International Volunteer @ Town&Country Learning Center   Mar 2018 - Jun 2018
- Taught K-12 children new media and technologies and encouraged their creativity by using these new technologies formats in video editing and programming
- Brought accessibility of technology to black community by educating the young generation in the technological format.
- Reviewed and analyzed the impact of new technology to these children and their thinking; presented personal reflection on how to encourage accessibility and inclusion for advanced technology

Volunteer Engineer @ Global TIES, University of California, San Diego   Jan 2018 - Mar 2018
- Provided an affordable alternative cooking technique to biomass burning in Tijuana, Mexico; Collaborated with local community group EUNIME
- Designed SolarOven that can serve as an environment friendly substitute and lowered budget compared to biomass burning
- Followed-up with on-site research and application. Deployed functional units to household in the region and passed onto the next team for improvement

Honors and Awards
- Honorable Project awarded by Dr. Amr Magdy   Winter 2020
- UCSD Provost Honor   Fall 2018 , Fall 2016

Publication
Yuanjie Zhu, Hussah Alrashid, Song Bai, Chunhan Zhang, Ziliang Zhang, Zhengyi Qu, Amr Magdy, On Construction and Applications of High-Definition (HD) Maps, SSTD '21, August 23–25, 2021, Online
Ziliang Zhang, Hung-Wei Tseng, Project OpenRPT: Open Remote Physical Therapy, March 2021
Ziliang Zhang, Security and Privacy of Data Center Review, Dec 2020

Technical Skills
Programming Language: Java 8/11, Python, C/C++, Shell Script, HTML5/CSS3/Javascript, Swift, Typescript;
Database: SQL-MySQL 8.x, PostgreSQL 13 and SQL Server 2019; NoSQL-MongoDB, Firebase, Redis;
Java/J2EE: Servlets 3.x, JSP 2.x, JDBC, JPA, JMS;   **Diagnostics**: JasperReports 6.x, Google Analytics;
Frameworks: Spring MVC 5.x, Spring Boot 2.x, Spring Cloud, Hibernate 5.x, Spring Security, Struts 2.0, kubernetes;
Cloud Service: AWS IAM, EC2, S3, Elastic Beanstalk, Load Balancer, DynamoDB, AWS Lambda, CloudWatch;
Servers: Apache Tomcat, Glassfish, JBoss, Nginx;   **Testing**: Junit 4/5, Mockito 3, SoapUI 5, Postman;
Messaging: Apache Kafka, RabbitMQ, Apache ActiveMQ;   **Frontend**: Jquery, Angular, Node.js, Bootstrap, REACT;
DS/ML: Pandas, NumPy, SciPy, Matplotlib, Scikit-learn, Tensorflow, PyTorch, Ray;
Dev Tools: GIT, SVN, Docker, VMware, JIRA, Log4j 2.x, Pair/Extreme Programming, Kibana
Hardware: SoC, Single Board, CUDA C, Edge TPU, AVX;   **UI/UX**: Figma, Sketch, Adobe Illustrator/InDesign;

Reference
- **Dr. Hyoseung Kim (PI)**, University of California, Riverside (hyoseung@ucr.edu)
Associate Professor, Department of Electrical and Computer Engineering; Chair, Computer Engineering Program; Cooperating Faculty, Department of Computer Science and Engineering
- **Dr. Hung-Wei Tseng**, University of California, Riverside (htseng@ucr.edu)
Assistant Professor, Department of Electrical and Computer Engineering; Cooperating Faculty, Department of Computer Science and Engineering
- **Dr. Daniel Wong**, University of California, Riverside (danwong@ucr.edu)
Assistant Professor, Department of Electrical and Computer Engineering; Cooperating Faculty, Department of Computer Science and Engineering; Graduate Advisor, Computer Engineering Program
- **Dr. Shaolei Ren**, University of California, Riverside (sren@ece.ucr.edu)
Associate Professor, Department of Electrical and Computer Engineering; Cooperating Faculty, Department of Computer Science and Engineering