Bingnan Peng

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EDUCATION

Rice University Houston, United States Aug 2019 - Expected Dec 2020
Major**:** Computer Science, Master (GPA: 3.81)
Coursework**:** Web Development, OOP, System Arch., Design & Analysis of Algorithms

University of California, Irvine Irvine, United States June - Sept 2018
Summer Exchange**:** Image Preprocessing in IoT system, Python Programming, Academic Seminar

Northeastern University Shenyang, China Sept 2015 - Jul 2019
Major: Software Engineering, Bachelor (GPA: 3.99)
Coursework: Algorithms & Data Structure, Operating System, Cloud Computing, Artificial Intelligence

INTERNSHIP

Bluewisdom Android Developer Feb - June 2019
Developed an application to assist staff in fire-control department to execute daily tasks.

- Designed GUI and connected **Android** application with backend data.
- Implemented the detection of firefighting equipment using libraries of Qualcomm's **Vuforia** in **Unity** and displayed 3-D UI after targets being recognized.
- Use Integrated Unity module into Android and passed data from Unity scene to activity.
- Completed 100% tasks ahead of time and collaborated with backend engineers and product manager to continuously improve development efficiency in all aspects, such as coding and testing.

Zcunsoft Software Developer June - Sept 2017
Took responsibility for setting up log analysis system and load balancing of proxy server

- Configured **Elasticsearch**, **Logstash** and **Kibana** on CentOS server.
- Collected website access logs with specific type of format, and forward processed data to Elasticsearch.
- Extracted valuable data such as IP addresses, accessed resources. Based on analyzation of website visitors' behaviors, designed a simple yet powerful load balancer of **Nginx**, increased service efficiency by 15%.

ACADEMIC EXPERIENCE

Using ArPico to Build Localization Service for Indoor IoT Applications

- Proposed an efficient image recognition technology that uses monocular camera to detect surroundings and identify device's location. Speed Difference between original technology and ArPico is less than 1%, while not only ArUco markers, but also majority of artistic pictures can be added into recognizable target set.
- Used the technology to deploy indoor drones so that each drone can be location-aware, and streamed video frames back to edge servers for human face recognition and identification of known individuals' location.
- Co-authored "ArPico: Using Pictures to Build Localization Service for Indoor IoT Applications" in 2018 IEEE 11th International Conference on Service-Oriented Computing and Applications.

Research on Robot Navigation using Intelligent Evolution Strategy

- Proposed a robot navigation method based on Intelligent Evolution, and reproduced Tolman Mouse Maze Experiment by robot rather than mouse.
- Verified the proposed method by simulation experiments based on **MATLAB** and conducted physical experiments on Turtlebot robot to test our intelligent evolution algorithm.
- Co-authored "Robot Navigation Method based on Intelligent Evolution" in 2018 IEEE 4th Information Technology and Mechatronics Engineering Conference.

COURSE PROJECTS

My Database System Implementation

- Built **C++** project by **SCons** with a well-defined QUnit.h for testing, facilitating the compiling configuration.
- Implemented basic query with aggregations and some optimizations, speeding up DDL in **SQL**.

Real-Time Social Software with WebSocket

- Developed 20+ website pages using **JSP**, **Bootstrap**, **jQuery** and **AJAX**.
- Implemented multiple functions including live chat, file sharing, profile management and so on.
- Implemented RESTful services with Java Apache to provide data storage in **MongoDB** database.

SKILLS

- Java, Python, C/C++, Linux, HTML/CSS, JavaScript, Git, Android, Swift, OpenCV, MongoDB, MATLAB, Docker, 3ds Max, Raspberry Pi, Maven, Spark