Xinpu Liu

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EDUCATION

Texas A&M University GPA:3.5/4.0   09/2019 - 12/2021
Master of Science in Electrical & Computer Engineering   College Station, TX
- Selected Coursework: Data Mining and Analysis, Analysis of Algorithms, Software Engineering, Deep Learning, Machine Learning, Reinforcement Learning

University of Electronic Science and Technology of China   09/2014 - 06/2018
Bachelor of Engineering in Electrical Engineering   Chengdu, Sichuan, China

SKILL

Programming: Python, JavaScript(ES6), Ruby, Shell, MATLAB, SQL   **| Database:** MongoDB, MySQL
Web Development: React, Redux, Express, HTML, CSS, jQuery, Bootstrap, EJS, Mongoose, Passport
Platform and Tools: Node.js, TensorFlow, Pytorch, Keras, Linux, AWS, Git, Postman, Robo 3T, Selenium

EXPERIENCE

TLAC Department, Texas A&M University   01/2020 - 05/2020
Non-Profit Software Engineer   College Station, TX
- Collaborated with a team of 6 programmers to develop a library website managing datas and documents and access requirements from users.
- Implemented user authentication and authorization part based on **Node.js, MySQL** and **React**.
- Built the front-end of the web with **React** and middle-ware & reducers with **Redux**.
- Tested and evaluated website basic functions(Login, Sign In, Logout, etc.) with automated testing framework **Selenium**.
- Adopted Agile workflow and weekly interaction with the customer, prototyped a working site in 3 months.

PROJECTS

Blog Web Application (Node.js, Express, MongoDB)
- Designed an interactive web page for users to post and read blogs, developed main front-end functions using **HTML/CSS/Javascript/Ejs.**
- Built a full stack **RESTful** feedback collection with **Node.js**, **Express** and **MongoDB.**
- Implemented **CRUD** operations with MongoDB for users to manage their blogs.
- Tested the **APIs** with **Postman**.
- Enhanced user authentication flow with **Google OAuth20** and **Cookies** and **Sessions** Using **Passport.js.**

TodoList Web Application (Express, MySQL)
- Built a website page for users to manage personal memo and TodoList.
- Implemented RESTful APIs using **Express** to handle HTTP requests and responses, and stored data in **MySQL**.

Hand Posture Recognition (CV, tensorflow, GPU)
- Built a dataset of 3000 labeled images using **LabelImg**.
- Designed and built a R-CNN model with **TensorFlow** based on modified **Inception-V2**.
- Fine-Tuned the hyperparameter and achieved a 20% improvement on real-time accuracy.
- Optimized the Faster-rcnn-Inception-v2 model to run 30+fps on a webcam using gtx-1080 GPU.
- Achieved an accuracy of 97% detecting the target hand postures in real time.

Reinforcement Learning for Optimistic Dialogue System (NLP, Seq2Seq)
- Designed an emotional dialog model that can show empathy to the speaker.
- Combined the existing **Seq2Seq** dialogue generation model with reinforcement learning.
- Created a new reward function for the dialogue model, improving the METEOR score 13.11% higher than the baseline.