JIA XU (She/Her)

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OBJECTIVE

Seeking Software Engineer Intern in Spring/Summer/Fall 2022

EDUCATION

Master of Science in Computer Science | Northeastern University, Seattle, WA Jan 2021 – Present

- GPA: 4.0/4.0
- Courses: Algorithms, Object-Oriented Design, Data Structure Algo & App in Computer System, Intensive Foundations of CS, Discrete Structures, Database Management Sys, Fundamentals of Computer Networking

Master of Civil Engineering | Zhejiang University, Hangzhou, China Sep 2008 – Sep 2011

- Research Topic: Experimental study and finite element analysis on bonding connections of steel structures. 3 papers.

Bachelor of Civil Engineering | Tongji University, Shanghai, China Sep 2004 – July 2008

- GPA 3% of the college | Excellent Graduate of Shanghai 2008 (Top 5%)

COMPUTER KNOWLEDGE

Languages: Java, Python, C, HTML, CSS, JavaScript, SQL, Bash Scripts

Concepts: Object-Oriented Design, Design Pattern, Unit Test, Multi-thread Programming, Computer System

OS, Software & Framework: Linux, Shell, IntelliJ, Gradle, Git, Processing, Visual Studio, Sublime, Vim

PROJECTS

Multi-layer tile map Webserver based on OSM data

- **Java, JavaScript, CSS, HTML, HTTP Service, Spark Service, jQuery**
- Implemented a Spark based http server that provides APIs and functionalities, including: 1) **Road network creation**: Used SAXParser to parse OSM data, and load nodes and ways data to build a map network graph. 2) **Zoom in/out**: Based on parameters from browser, real-time calculate and pick corresponding OSM map tiles with appropriate level, and render the map tiles on the browser. 3) **Coordination to Location**: Used k-d tree to find a legal place closest to the coordination. 4) **Navigation**: Backend server used the A* algorithm to calculate the shortest path from start point to end points requested by the user. Draw the navigation path on the map, and show the driving directions text at the front end. 5**) Autocompletion and Location search:** Implemented an automatic completion system to complete the user's location search, and draw red dot markers on each of the matching locations.

Connect Four game with AI robot

- **Python, OO Design, MVC, Processing GUI framework**
- Implemented a Processing GUI framework based "Connect Four" game with MVC architecture. This game supported both human-human and human-computer Playing. Multiple components includes: 1) Game rendering component. 2) Gaming logic handling controller. 3) Score recording and racking system. 4) AI robot based on minimax algorithm with alpha-beta pruning.

Other Project:

- Designed a task management system. Led and cooperated with 2 teammates through version control tool (Java)
- Implemented an operation system shell (C language)
- Architected and Implemented a 2D GUI game, including a pseudo-random world generator based on seed (Java)
- Implemented an image resizing tool using the seam-carving technique (Java)

WORK EXPERIENCE

Registered Structural Engineer | China Aviation Planning and Design Institute, Beijing, China July 2011 - Apr 2016

- License: Class 1 Registered Structural Engineer in China
- Key designer of more than 35 projects (Hangars, Cargo Warehouses, Airship hangars, Office Buildings, Hotels, etc.)
- Structural design leader of 2 Projects (Including an XXL Hangar with a span >120m and an area > 10,000m^2)