Hongyu WANG

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SUMMARY

Current graduate student with an interest in HCI, software engineering, users requirements analysis , particularly in applying HCI and software engineering techniques to design systems. Had research experience on interactive systems for architectural designers and physicians at Southeast University and Zhejiang University, China. Proposed two research topics independently and developed them into dissertation projects with interested supervisors in sheffield and queen mary university of london, successfully designed and developed functional teaching tools for educators and algorithms novices.

EDUCATION

➢ **Queen Mary University of London** **09/2023 - 10/2024**

- **MSc FT Computer Science (User Experience Design pathway; Distinction)**
- **The overall average for all modules is 76.4%.**
- **Dissertation -** "A Dynamic and Static Analysis-Driven Data Structures Visualization System" .(Self-proposed research topic, achieved **distinction**).

➢ **University of Sheffield** **09/2020 - 06/2023**

- **BSc(Hons) Artificial Intelligence and Computer Science**
- **Dissertation - "**User-Defined Data Structures and Algorithms Visualisation Teaching Tool for Beginners**"** (Self-proposed research topic, achieved **distinction**).
- **Awarded- 2022-23 Software Hut Prize (Client).**

WORKING EXPERIENCE

➢ **Research Assistant (Part-time)** **11/2024 - Recent, Zhejiang Uni, China**

- **Situation:** Joined Zhejiang University's research team to enhance an AI-assisted diagnostic tool work with Picture Archiving and Communication System(PACS) by focusing on HITL (Human-in-the-Loop) interface design, supervised by Professor Li Zhao (Academic Email: lizhaomri@zju.edu.cn).
- **Task:** Design a web-based interface for implementing HITL mechanisms to enable real-time physician intervention and feedback to improve the accuracy of the AI model.
- **Action:** Design and implement interactive features such as real-time annotation tools and dynamic parameter control to facilitate physicians to correct the behavior of AI models.
- **Result:** Successfully deployed the interface in clinical settings, improving AI model performance and contributing to the overall project's success.

➢ **Research Assistant (Part-time)** **07/2023 - 10/2023, Southeast Uni, China**

- **Situation:** Joined the Institute of Architectural Algorithms & Applications to develop an optimal decision-support system for architects and researchers, aimed at automating the generation of alternative architectural floor-plans by integrating rule-based algorithms, supervised by Professor Peng Tang(Academic Email: tangpeng@seu.edu.cn).
- **Task:** Collaborate on backend development and the design of the system's interactive interface to enhance usability and decision-making efficiency.
- **Action:** Designed a "Confidence Index" feature, powered by a trained model, to evaluate differences among generated floor-plans. Smaller differences indicated higher confidence (closer to optimal solutions), visualized through intuitive UI elements.
- **Result:** Delivered a user-centric interface praised by architectural experts within the institute, improving the system's adoption and facilitating faster identification of high-quality design solutions.

RESEARCH & PROJECT EXPERIENCE

➢ **Postgraduate Dissertation Project** **02/2024 - 08/2024, QMUL**

Title: A Dynamic and Static Analysis-Driven Data Structures Visualization System

- **Project Overview:** Independently designed and developed a Java algorithm learning system for beginners, dynamically displaying data structures and their corresponding code in user-written java programs on the UI.
- **System Design:** Utilized the MVC pattern, based on the JavaFX framework, combined with the Javaparser library to parse programs and achieve dynamic visualization effects.
- **Technical Implementation:** Developed automatic program slicing technology to extract key objects and convert them into visual graphics, supporting real-time display of code execution processes.
- **Project Outcome:** Feedback from 15 users indicated that over 90% found the system effective in promoting algorithm learning. The project was rated as an excellent graduation design.

➢ **Undergraduate Dissertation Project** **10/2022 - 06/2023, Uni of Sheffield**

Title: User-Defined Data Structures and Algorithms Visualization Teaching Tool for Beginners

- **Project Overview:** Independently developed a visualization teaching tool for data structures and algorithms aimed at beginners, enhancing teaching interactivity and student comprehension.
- **Teacher Support:** Teachers can customize data structure graphics, dynamically display algorithm execution processes, and highlight the currently executing code line.

- **Functionality Improvement:** Implemented synchronized code and animation playback, supported storing animation files, and sharing through an online courseware system.
- **Project Outcome:** A project survey showed that 80% of users believed the tool effectively improved teaching efficiency. The project was ultimately rated as an excellent graduation design.

➢ **Real-time Weather Query System** **10/2024 - 11/2024, QMUL**

- **Project Overview:** Independently developed a global real-time weather query desktop system using Haskell and SQLite database.
- **System Features:** Implemented real-time weather data online search and download, supported local data search, deletion, and clearing.
- **Unit Testing:** Completed necessary unit tests to ensure system stability.
- **Project Outcome:** Achieved the **highest grade of 90/100**, successfully presented and submitted.

➢ **Medical Internship Search Website** **11/2022 - 03/2023, Uni of Sheffield**

- **Project Overview:** Designed and developed an online medical job search website using Ruby on Rails framework and SQLite database.
- **Functionality:** Supported multi-user registration, job posting uploads, job favoriting, applications, and keyword-based search.
- **Collaboration Management:** Managed project requirements and Kanban through Jira, conducted unit and functional testing to ensure system stability.
- **Project Outcome:** Deployed to a virtual host and satisfactorily accepted by hospital staff, awarded the **Team Software Development Client Award.**

POSITIONS OF RESPONSIBILITY

➢ **Software Hut Project Team Leader** **01/2023 - 05/2023, Uni of Sheffield**

- Led a team of 6 members in developing a web application software solution for a real client, overseeing the entire software development lifecycle from requirements gathering to final delivery.
- Improved project management skills by utilising agile methodologies, conducting regular team meetings, and ensuring timely completion of project milestones and deliverables.
- *Awarded- **2022-23 Software Hut Prize (Client).***

➢ **User Experience Design Team Project Leader** **02/2024 - 05/2024, QMUL**

- Utilised industry-standard UX tools such as Figma for collaborative design, and Maze for remote user testing, resulting in a 30% improvement in user satisfaction metrics.
- ***Achieved distinction - 76%.***

LANGUAGES & SKILLS

➢ Languages

- Fluent in English; Native Speaker in Mandarin.

➢ Technical Skills

- **Programming Languages:** *Java(GUI, desktop/android application, web application); JavaScript(GUI, web application); Haskell(web/desktop application); Python(data mining, statistics, ML); HTML(GUI, web application); Latex(essay); Dart(Cross-platform mobile application).*

- **Frameworks:** *React(Web app front-end); Vue.js(Web app front-end); TensorFlow(ML); Keras(ML); Anaconda(numpy, pandas, matplotlib); Flutter(Cross-platform mobile application); Node.js.*

- **Tools:** *UML(Unified Modelling Language, software System design)*;*XML(Extensible Markup Language, system modules data transmission); JSON(system modules data transmission); SQL(Database operation); Figam(GUI design); CSS(GUI, web application); VMware(Robotic system development by ROS on ARM-Chip equipment.); Docker(Source code packaging and distribution); JUnit(Java projects testing); Mockito(Java projects testing); JavaParser(Static analysis in postgraduate dissertation projects).*

REFERENCES – *Available on request*