KANGHENG LIU

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Education

Georgetown University — Sep. 2023 – May. 2025
Master of Science in Data Science and Analytics — *Washinton D.C., USA*

Lanzhou University — Sep. 2019 – Jun. 2023
Bachelor of Science in Data Science — *Lanzhou, China*

Experience

Massive Data Institute, Georgetown University — Jul. 2024 – Current
Research Scholar — *Washington D.C., USA*
- Implemented R and Python data extraction, computation and tabulation modules for Secure Query System - a security-focused tax data handler in collaboration with IRS SOI.

School of Data Science and Analytics, Georgetown University — Sept. 2023 – Jun. 2024
Teaching Assistant — *Washington D.C., USA*
- Instructed and mentored 50 students in Neural Network and Deep Learning curriculum and Data Science BootCamp.

School of Information Science and Engineering, Lanzhou University — Jul. 2022 – May. 2023
System Architect — *Lanzhou, China*
- Set up and optimized data commnuication by 10% with Kubernetes clustering containerized applications management system with Ceph distributed storage for university net-based services, hosted various Lanzhou University web portals. Significantly reduced cost ($\sim 20\%$) for hosting hardware and system maintanance while improving performance for scaling up applications and data trafficking.

Huawei Inc. & Lanzhou University — Jul. 2021 – Aug. 2021
Teaching Assistant — *Lanzhou, China*
- Deployed extensive Linux based Data Mining development environment with OpenEuler® operating system.
- Tested OpenGauss® relational database system by Huawei Technologies Co., Ltd based on ARM CPU architecture.
- Adopted Mindspore® by Huawei Technologies Co., Ltd automatic differentiation technique, code transformation techniques for deep learning.

Projects

Intelligent Campus Oriented Emotion Recognition & Depression Assistance System |
Python, SQL, NLP — Mar. 2022 – Nov. 2022
- Gathered data (information collection, text semantic analysis and classification), cleaned, and pipelined to application back-end database.
- Wrote handler on MySQL database with SQLalchemy extension library.
- Performed semantic analysis with Natural Language Processing.

Design and Implementation of Telemedicine System |
Software Development Cycle Management, Data flow design, Database Architecture design — Mar. 2021
- Evaluated the domestic and international developmental context as a precursor to the research background analysis.
- Designed the architectural framework for implementing a telemedicine system.

Another File Management System: Stardust | *C, Python, Unity3D* — Sept 2019
- Designed a classification/recommendation system for accessing recent files.
- Implemented python GUI interface for file manager with PyQt.

macOS OpenCore Installation on Non-supported Hardware |
C++, bash, ACPI, AppleScript — Sept 2019 – Dec 2022
- Installed macOS on spoofed non-supported HP laptop, written Kernel patches for motherboard ACPI table.
- Improved touchpad functionality within the VoodooSMBus/VoodooRMI driver repository on GitHub, elevating its performance.
- Wrote ACPI patches for optimizing hardware performance, extending battery life by 40% while maintaining same CPU performance.

Technical Skills

Languages: Python, Lua, R, bash, HTML/CSS, JS, TS, C, SQL, C++, ACPI Source Language, AppleScript
Developer Tools: Neovim, VS Code, Huawei Cloud Platform, AWS, Azure, GCP, Xcode
Technologies/Frameworks: Linux, Tensorflow, Pytorch, Langchain, NextJS, ReactJS, GitHub, Gitee, Quarto, LaTeX, macOS Kernel Extension