

Projects (Personal)

Project Tides (VMware) – Elastic Platform on Idle Cloud Resources

Open-source project to donate private enterprise cloud resources (<https://github.com/dzl84/CloudTides>)

Project paper here: https://bit.ly/project_tides

- Developed a tool using ReactJS frontend, Django backend and k8s to monitor vSphere cloud resources usage and dynamically donate resources to public volunteer computing through BOINC.
- Currently supporting development with VMware team to extend tool for Folding@Home towards finding COVID-19 solutions.

GeekOS x86 Kernel

Tiny operating system kernel for x86 PCs running on Qemu.

- Extended operating system using assembly and C to implement forking, virtual memory, file systems, synchronization.

Tethi: Task Manager Program in ARM Assembly and C

Custom timer-based task manager for ARM Cortex-M Processor

- Programmed the STM32L476 Discovery board to run GPIO, ADC, DAC, SPI, I2C and timer control functions in custom task manager environment.

Movie Data Visualization Tool in ReactJS

Web-based tool for visualizing movie data with filter interaction control

Demo: <https://dbaeka.github.io>

- Built a fast rendering visualization tool for movies using ReactJS.

UMD Latency Research Website Tool (Flask)

Tool for analyzing how users respond to latency when doing visual search with panning and zooming.

(<https://visualsearchlatency.herokuapp.com/search-study/>)

- Designed visual tracking tool in Python which is scalable and synthesizes user interactions for latency analysis.