

Edward Hu

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EDUCATION

THE UNIVERSITY OF TEXAS AT AUSTIN | BS COMPUTER SCIENCE& MATHEMATICS Austin, TX | January 2016 - May 2020
GPA: 3.72

COURSEWORK

Concurrency, Operating Systems, Computer Architecture, Algorithms and Complexity, Data Structure, Computational Intelligence in AI

EXPERIENCE

THE UNIVERSITY OF TEXAS AT AUSTIN | STUDENT RESEARCHER Austin, TX | August 2016 – Present

- Cooperated with a team of three to develop tools that automate 3-D printer error detection
- Designed a neural network to predict error type present in flawed objects
- Wrote Python scripts to dynamically detect and modify different flavors of 3-D printer instructions

SKILLS

PROGRAMMING LANGUAGES	C/C++, Java, Go, Python, Javascript, \LaTeX , Unix shells
FRAMEWORKS	OpenMP, NodeJS, Tensorflow, Numpy, Matplotlib
TECHONOLOGY	Linux, GCC/Clang, Docker, Nvidia CUDA, Git, Vim, HTML

PROJECTS

PINTOS | A FUNCTIONAL OPERATING SYSTEM IMPLEMENTED IN C

- Implemented the scheduling system with multilevel feedback queue and priority donation.
- Implemented system level API such as `exit()` and `kill()`
- Designed a virtual memory system with single-level page table implementation
- Constructed a Linux-like ext3 file system

C THREAD POOL | A THREAD POOL IMPLEMENTED IN C WITH GO-LIKE FUNCTIONALITY

- A thread pool with task structs mapped upon pthreads with performance close to Golang goroutine
- Dynamic load balance thread pool with a thread daemon
- Synchronization mechanisms between task structs borrowed from Go

PARALLEL K-MEANS ALGORITHM | PERFORMANCE SCALING BY UTILIZING X86 MULTICORE ARCHITECTURE

- Implemented K-means algorithm in C++ and distributed computations upon Unix pthreads using C++11 synchronization standard
- Manual implementation of synchronization mechanism such as Mutex, Spinlock, and barrier

MINE SWEEPER | NEURAL NETWORK TRAINING

Implement a three-layer neural network in Python to increase game units' efficiency in sweeping mine using Pygame framework

EXTRACURRICULAR

HACKTX

Austin, TX | January 2016 - May 2020

Design an Android app to extract product order information from Adidas official website with a team of three

CODING BLOG

<https://bdhu.github.io/>

Share my personal experience and difficulties encountered during programming, and new features of programming languages.

LINUX KERNEL HACKING

I'm mostly interested in memory management subsystem and how virtualization is utilized.