Hantao Wang

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EDUCATION

UC BERKELEY

B.S. in Electrical Engineering and Computer Science
Expected Fall 2019 | Berkeley, CA
Cum. GPA: 3.81 / 4.0
Major GPA: 3.95 / 4.0

HONORS

Eta Kappa Nu (HKN) Dean's Honor List, Sp 2017 - Pre Passed the Turing Test (2018)

COURSEWORK

CURRENT

- Probability and Random Processes
- Information Devices and Systems
- Operating Systems

COMPLETED

- Algorithms & Intractable Problems
- Computer Architecture
- Internet Architecture & Protocols
- Discrete Math & Probability Theory
- Data Structures
- Structure of Computer Programs

EXPERIENCE

NETWORK SYSTEMS LAB | Research Assistant

April 2017 – Present | Berkeley, CA

- Currently researching how distributed systems respond to developer defined event triggers, looking at feasibility, convergence, performance issues.
- Previously researched the identification of resource utilization bottlenecks in a distributed system by systematically throttling container resources. Implemented this as Throttlebot, a tool that automates this process.
- Co-authored research paper on the theory, effectiveness, and applications of ThrottleBot (preparing for submission @ OSDI 2018).
- Designed, deployed, and tested popular distributed applications such as Spark Streaming, MEAN stack, and ELK stack in addition to creating custom applications using microservices such as Redis, etcd, Spark, Nginx, Django, etc.

BERKELEYTIME | Backend Developer

September 2017 – Present | Berkeley, CA

- Working on backend projects in Django and with Postgres. Implemented user authentication and working on user accounts.
- Once every 1000 RuntimeExceptions, I implement something cool in the frontend.

COMPUTER SCIENCE MENTORS | Mentor

Feb 2018 – Present | Berkeley, CA

- Teach CS 61B: Data Structures to a small section of 5 students once a week.

GULFSTREAM AEROSPACE | Apprenticeship

August 2015 – June 2016 | Long Beach, CA | Mach 3 Award

- Worked with the mechanical engineering teams on interior design drawings of G550 and G650 aircraft using AutoCAD and CATIA.
- Created & updated computer aided drawings and assemblies. Reviewed & corrected other engineer's drawings and specifications.

PROJECTS

KUBEHANDLER

Go library where users can define a set of rules on the cluster called "triggers." Monitors the state of the cluster with client-go and activates triggers when certain specifications are not met. Runs on my custom build of Kubernetes that is able to trace events through the update pipeline. Operates alongside with another projected called Kubewatch that forwards cluster events to Kubehandler.

THROTTLEBOT

Python library that reduces the cost while maintaining performance on a cluster specification by systematically stressing services and finding a minimum resource utilization for each service. Identifies bottleneck resources and non-impactful resources in the system in doing so. Finds a configuration of containers that meets a performance target while minimizing the number of machines used.

CMETRICS

Python server that monitors and aggregates container resource utilization information across a cluster and is then able to log and graph this information. Also serves it through GET requests from its API endpoint, to be used with other apps.

FOOD FINDER

Web app that learns from user preference to make local restaurant suggestions. Boostrap frontend and Django-Nginx combo backend. Uses Redis to store session information and etcd to store user authentication. Deployed on AWS using Quilt.

DATABASE

SQL-like relational database management system (RDBMS) and corresponding Domain Specific Language (DSL) implemented in Java with commands such as load, store, select, with, as, from, etc. Able to perform Cartesian joins of two or more tables in accordance to filter specifications defined by user input.