

Hongchao Deng

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Education

Carnegie Mellon University

M.S. in Information Network Institute

Focused on distributed systems. Implemented EPaxos advised by David G. Anderson.

Aug 2012 - May 2014

Pittsburgh, PA

Sun Yat-Sen University

B.S. in Computer Science Department

GPA: 3.9/4.0. Rank 1st. ACM/ICPC competition first prize.

Sep 2008 - Jun 2012

Guangzhou, China

Work Experience

Helium Three Technology

Founder and Chief Technology Officer

Apr 2022 - Present

Shenzhen, China

- Founded **He3** (a modern developer toolbox), where I led the whole product lifecycle, from ideation to fundraising, team building, development, marketing, etc.
- Hands-on experience of building apps using **Vue**, **Electron**, **Express**, **Prisma** on Tencent Cloud.
- Leveraged **GPT-4**, **LangChain**, and **Pipecone** to enhance our users' search experience.

Alibaba U.S.

Staff Engineer and Senior Architect

Mar 2018 - Apr 2022

Sunnyvale, CA

- Led the **cluster scheduling** team to support **cloud-native transformation** of company-level **compute infrastructure** (CPU, GPU, FPGA, NUMA).
- Scaled largest Kubernetes cluster to **26,000 nodes** through innovative algorithms such as equivalence class, relaxed randomization, delta cache.
- Collaborated with the AI team to apply **machine learning algorithms** to achieve well-balanced, high utilization of cluster resources.
- Implemented cluster monitoring and analysis using **Prometheus**, **Grafana**, and **Alibaba Cloud Log Service**.
- Founded **Open Application Model** and **KubeVela** (CNCF Incubating project), in collaboration with Microsoft Azure, to streamline **multi-cloud application deployment**.

CoreOS (acquired by RedHat)

Senior Engineer and Team Manager

Oct 2015 - Mar 2018

San Francisco, CA

- Contributed to the development and upkeep of the **Kubernetes** open source project, where I had improved the scheduler performance by **1400%**.
- Pioneered the creation of the **Kubernetes Operator** pattern, which has now become a widely adopted solution for operating bespoke applications on Kubernetes.
- Hands-on experience of operating our cloud offerings on **AWS** and **Azure** using **Terraform**, **Helm**, **Docker**, **Jenkins**.
- Led the Kubernetes operator team, where I co-founded **etcd operator**, **vault operator**, **operator framework** open source projects.

Cloudera

Software Engineer

May 2014 - Oct 2015

Palo Alto, CA

- Contributed to the development and upkeep of the **ZooKeeper** project in both open source and Cloudera commercial platform.

Service

Co-Chair of CNCF App-Delivery TAG

Cloud Native Computing Foundation

Maintainer of Kubernetes project

Cloud Native Computing Foundation

Committer of ZooKeeper project

Apache Software Foundation

Track Chair & Reviewer

KubeCon + CloudNativeCon North America 2022

Track Chair & Reviewer

KubeCon + CloudNativeCon Europe 2022

Session Producer & Host

CSDI Technology Summit Shenzhen 2021

Public Talks

Introduction and Deep-Dive into TAG App Delivery

KubeCon + CloudNativeCon North America 2021

Zero Pain Microservice Development and Deployment with Dapr and KubeVela

KubeCon + CloudNativeCon Europe 2021

Standardizing Cloud Native Application Delivery Across Different Clouds

KubeCon + CloudNativeCon North America 2020

How Alibaba Improves Developer Experience on Kubernetes

DeveloperWeek 2020, San Francisco

Serverless Beyond FaaS

Serverless Practitioners Summit Europe 2020

What is Kubernetes Operator? How to Build It with Go?

GopherCon China 2017

Golang Performance Debugging and Tuning in Large Scale Distributed Systems

GopherCon China 2016

1000 Nodes and Beyond: Performance Improvement in Kubernetes

CoreOS SF Day 2016

TaskGraph – A Distributed, Fault Tolerant Machine Learning Framework

CoreOS Fest 2015

Language Proficiencies

English Full professional proficiency

Chinese Native proficiency

Work Authorization

I currently hold H1B Visa (no lottery needed) and can legally work in the United States.