

# Di Xu

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## Working Experience

### Microsoft Corporation, Sr. Software Engineer, Redmond

2021/09 Recommendation platform

- Design and implement Feature Extraction Library in **C++** which was used as main native library for computing features for Reco system. Migrated all C# features logic to the library. Reduced L2 ranking and E2E latencies and CPU usage.
- Design and implement Content Builder based on **Kafka**, provide user abstract to implement logic to handle message without care queue. This service provides an entry point for data scientists to implement injecting time features.

### Microsoft Corporation, Software Engineer II, Bellevue

2019/12 Deep Learning Training Service.

- Improve 95th percentile job creation time from 400s to 46s.
- Speed up job initialization time from 45s to 2s.

Recommendation platform

- Design and implement service downgrade capability. This helped reducing the incident severity.

### Microsoft(China) limited, Software Engineer II, Beijing

2018/06 OpenAI platform that provide complete **AI** model training and **resource management** capabilities.

- Owner of monitoring subsystem, implemented a careful designed structure to minimize the impact of hanging process.
- Designed and implemented PAI runtime, which is the contract between user's job and training platform. Unified runtime environment of hadoop based backend and **kubernetes** based backend.

Collaborate with Bellevue DLTS team to build Deep Learning Training Service.

- Help unify monitoring system of DLWorkspace with OpenAI, implement many monitoring features required by DLTS.
- Refactored Job-Manager which is the backbone of DLTS, leveraged knowledge gained in OpenPAI to build make Job-Manager more scalable and efficient.
- Use **Kusto**'s data to implement a physical machine topology aware scheduling, improved training efficiency.

### Baidu Inc., Software Engineer, Beijing

2016/03 Matrix platform that is **Borg/Kubernet**e like **distributed cluster management system**

- Re-architect master server: changed underlying data storage from **MySQL** to **Raft**, improved system availability from 99.9% to 99.95%, shorten failover time from 30min to 1min.
- Evaluated several resource allocation algorithms using allocator-simulator and introduced some into the system.
- Designed and implemented serveral features requested by PaaS and users, including but not limited to disk selection, host selection and resource isolation.

## Alibaba Cloud Computing (Aliyun) Inc., R & D Engineer Intern, Beijing

2015/05 Pangu system which is a **GFS** like **distributed storage system**

- 2015/09 • Collected & analysed usage data from production env, successfully persuaded end users to use system more effectively, resulting in **50%** less disk usage.
- Analysed & restricted policy of list & read APIs, improved QPS from 110k to 150k.

## BearyInnovative Inc., Software Engineer, Beijing

2014/08 BearyChat, a Slack like product

- 2015/05 • Designed backend topology, re-architect service from single node to **distributed** nodes, eliminated the risk of timestamp conflicting & single point of failure.
- Implemented 4 **critical** & many other important product features in web API server written in **Clojure**.

## AdMaster Inc., R & D Engineer Intern, Beijing

2013/04 Data collecting system

- 2013/09 • Implemented 10 data processing algorithms in **cascading**, answered how many UV & PV per ad and characteristics of the viewers. These data will be presented to users directly.
- Maintained & optimized data collecting module written in **python**, speeded it up by **13%**.

## Project Experience

### Google Summer of Code - Typed Clojure

2014/05 Added 2 function type annotations to **Typed Clojure**. Enabled some core library functions being annotated without hard-coding. Made type system more sound.

- 2014/08 • Came up & implemented a design much more **expressive** than mentor's.
- Unified internal representation of Seq types, the most important type family in Clojure.
- Improved core library annotation coverage by **7%**, made Typed Clojure more user friendly.

### Java Symbolic Executor targeting Android App

2013/10 Used by Android analysis team in Tencent Inc. Sponsored by **CCF-Tencent Open Fund**.

- 2014/05 • Designed & implemented **core abstraction**, enhanced **robustness & readability**.
- Designed test framework and conducted test, found out & fixed 3 **critical bugs** & several minor bugs, resulting in more **reliable** code base before entering next development stage.
- Optimized the program before shipping to the users, reduced its memory usage by **65%**.

## Education

2013/09 M.S. in **Software Design, University of Science and Technology of China**

2016/03

2009/09 B.S. in **Computer Science**, Dalian Polytechnic University

2013/06