

# Pinglei Guo

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## WORK EXPERIENCE

**PayPal:** Software Engineer 2 - Container Orchestration system in Go San Jose, CA May 2018 - Present

- Working on internal multi data center container orchestration platform using Apache Mesos, Aurora and Docker.
- Introduced new deploy strategy and implemented dynamic internal system check during deploy.
- Fixed race condition during deploy by merging user and internal events in state machine.
- Built REST API and cli tools in Go for collecting log and metrics along with distributed tracing.

**PayPal:** Software Engineer Intern - Admin Server & Dashboard in Go San Jose, CA June 2017 - Sep. 2017

- Built API gateway with RBAC for internal container orchestration platform using Go.
- Enhanced dashboard using Angular 4, used by operation team to troubleshoot Java, Node app and manage cluster itself.
- Introduced full text search using Apache Solr, wrote an open sourced Go client with cleaner API.

**Dongyue Web Studio:** (Part-time) Full stack web developer & Tech lead Shanghai, China Sep. 2013 – Jan. 2016

- Led web and mobile team. Refactored online ticket booking application tongqu.me in 3 month, used by 20,000 students .
- Built high traffic website and REST API using **PHP** and **MySQL**, reduced database contention using job queue and cache.
- Utilized **Redis** as cache and rate limiter, increased QPS by 120%, reduced database load by 40%, filtered out most bot traffic.
- Refactored jQuery codebase using AngularJS, increased homepage loading speed by 60% using Ajax and pre-render.

## PROJECT EXPERIENCE

**Go util library collection** [github.com/dyweb/gommon](https://github.com/dyweb/gommon) Open Source Side Project March. 2018 – Present

- Built a high performance logging library with fine grained log level control across library dependencies
- Implemented data structure missing from standard library, i.e. set, tree
- Merged template rendering, static asset embedding into a single generator library as replacement for go:generate

**Distributed database benchmark framework** [github.com/benchhub](https://github.com/benchhub) UCSC Nov. 2017 – March. 2018

- Designed a specification for running distributed database benchmark.
- Built a queue based scheduler to run distributed database and workload generators.
- Stored benchmark results in time series databases and metadata in relation databases.

**Distributed Time Series Database** [github.com/xephonhq/xephon-k](https://github.com/xephonhq/xephon-k) UCSC Nov. 2016 – Present

- Implemented a distributed time series database on top of Cassandra in Go. Support both JSON and Protobuf via HTTP/2.
- Designed a columnar format modeled after Parquet and InfluxDB with higher compression and less write amplification.
- Created benchmark suite for Xephon-K, OpenTSDB, KariosDB, InfluxDB and a generic client for different TSDB.
- Surveyed popular TSDB design and implementation, made an interactive online report called awesome-time-series-database.

**GPU accelerated in-memory time series processing** [github.com/at15/ts-parallel](https://github.com/at15/ts-parallel) UCSC Apr. 2017 – June 2017

- Expanded benchmark suite for different C++ GPU computing framework on CUDA and OpenCL, Thrust, Boost, ArrayFire.
- Implemented OLAP queries like top-K, group by for multi dimensional time series data on both CPU and GPU backends.

## EDUCATION

MS. Computer Science University of California Santa Cruz GPA 3.9 Sep. 2016 – Mar. 2018

BS. Materials Science Shanghai Jiao Tong University GPA 3.3 Sep. 2012 – June 2016

## SKILLS

Language Go, JavaScript, Java, C++, Python, SQL, PHP, Shell  
Database Cassandra, MySQL, Elasticsearch, MongoDB, Redis, KairosDB, OpenTSDB, InfluxDB, Prometheus, Graphite  
DevOps Docker, Kubernetes, Mesos, Aurora  
Framework Angular, Vue, Laravel, Spring, Dropwizard, Express, Rails, CUDA, Hadoop