Xinyue Ou

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Education

- **University of California, San Diego** — La Jolla, CA
  Master of Science in Computer Science — *Sept 2017 – Mar 2019*
  - **Courses:** Operating Systems, Security, Database, Networked Systems, Neural Networks, Parallel Computing.
- **Shanghai Jiao Tong University** — Shanghai, China
  Bachelor of Science in Electrical and Computer Engineering — *Sept 2013 – Aug 2017*

Programming Skills

- **Languages**: C/C++, Go, Java, Python, Ocaml, Scala, Javascript, SQL.
- **Skills**: Distributed System, Multiprogramming, NoSQL, Machine Learning
- **Tools**: Git, TensorFlow, PyTorch, Docker, Gradle, Maven, Django, ProtoBuf, ANTLR, Netty, Flume, gRPC.

Experience

- **Google, Inc.** — Mountain View, CA
  Software Engineer Intern @ Display Ads Infrastructure — *June 2018 – Sept 2018*
  - Developed a data pipeline in **Flume** to generate user profile digest for ads recommendation, fixing 75% missing data generation and traffic tracking.
  - Deployed 10+ jobs through **Borg** and executed phased rollout.
  - Implemented an web UI using **Django** to monitor results of petabyte scale data service.
- **Intel Asia-Pacific R&D Center** — Shanghai, China
  Software Engineer Intern @ BigDL Data Analytics — *Feb 2017 – July 2017*
  - Used Bash and Python to efficiently port Neural Network modules from Scala to Python.
  - Designed memory shared mechanism for buffers in Neural Network modules that saves 50% of memory usage.
  - Built a graph converter in Scala that converts machine learning models into graphs to accelerate the training of NN modules.

Projects

- **Key Value Storage Server - Go** — *Feb 2019 – Mar 2019*
  - Designed a strongly consistent key value storage system with linearizability and idempotent transaction that can tolerate multiple server failures and network partition.
  - Implemented a full RAFT protocol with leader election, log replication, log compaction and snapshot.
  - Heavily exposed to multithreading semantics of Go.
- **Vulnerability Excavation of Secure DDS Systems - Ocaml, Python, Docker** — *Oct 2018 – Dec 2018*
  - Developed a passive network reconnaissance technique extracting underlying data object topology of Secure DDS Systems, a widely used protocol for IoT devices. Experimented process in a Docker containerized within a software defined network.
  - Built a system validation and penetration testing tools of DDS access control using Ocaml and Imandra, a formal verification tool.
- **Multiprogramming Support for Nachos Kernel - Java** — *Oct 2017 – Nov 2017*
  - Designed a virtual memory management system that enables demand paging, lazy paging and page swapping.
  - Managed multithread programming using mutex, semaphore and conditional variable.
  - Implemented file-related and process-related system calls for Nachos kernel.
- **Triton Router - C** — *Nov 2018 – Dec 2018*
  Implemented a simple router that supports ARP, ICMP and IP.
- **Sliding Window Protocol for Flow Control - C** — *Oct 2019*
  Implemented an efficient Go-back-N sliding window protocol with CRC error detection.
- **UCSD Class Schedule Calendar Generator - Javascript** — *Feb 2018*
  Designed a chrome extension that can generate a calendar file by parsing the web page of UCSD WebReg.
- **Gossip Membership Protocol - C++** — *Nov 2017 – Dec 2017*
  Implemented a gossip membership protocol in an emulated distributed system.