Gan Xu

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EDUCATION

- MS, Computer Science, Washington University in St. Louis 09/2018- 05/2021
- BS, Computer Science & Mathematics, University of North Carolina at Chapel Hill 08/2015- 12/2017

TECHNICAL SKILLS

- **Programming languages:** Java/Kotlin, Python, TypeScript, C/C++, Shell, HTML, CSS
- **Framework and Tools:** Android, React, Git, Kafka, Docker, Protobuf
- **Related Coursework**: Algorithms, Data Structures, Databases, Operating System, Computer Networks, High Performance Computer System, System Security, Artificial Intelligence, Machine Learning, Bayesian Methods in Machine Learning etc.

WORK EXPERIENCE

Snap Inc. **Santa Monica, CA**
Software Engineer - Messaging Client *June 2021 - Now*

- Design, develop, modify applications and systems to Messaging and related functions on **Android** Snapchat app
- **Cross-platform UI** development in **Typescript** with Snap's framework (comparable to **React Native**) on iOS and Android
- Collaborate with back-end engineers to implement large scale **full-stack** projects.
- Design and set up user **metric reporting** and **analyze, present** results from **AB studies** for **5+** major new features.
- **Cross-team** and **cross-function** collaboration with new feature design, implementation, integration and AB analysis
- Contributed to some highly impactful features including Chat-Reply(**200+ millions DAU**), Voice Note Revamp(**3rd most sent message type**), Create Chat Page v2, [Family Center(Android **lead**)

Washington University **Saint Louis, MO**
Graduate Research Assistant *Feb 2019 - Nov 2020*

- Proposed methods and ran experiment to improve the communication performance over unreliable networks for **distributed AI algorithms**, including message partition and reconstruction, customized **Reliable UDP** protocol, forward error correction and etc. **50% run time reduction** over plain TCP for some extreme conditions.
- Collaborated with **Raytheon** BBN Technologies on DAPRA funded **distributed AI** project, details available upon approval.

University of North Carolina **Chapel Hill, NC**
Assistant Bioinformatic Analyst - Full-time *Feb 2018 - Aug 2018*

- Proposed and implemented [fast phylogenetic analysis algorithm] which are **90% faster** than traditional method while maintain use-able accuracy (million-year resolution).
- Set up work environment on cluster with SLURM workload scheduler. Migrated old workflows from **LSF** platform to **SLURM**.
- Designed and optimized workflow pipelines for I/O and CPU heavy job, reduced **50%** idle time for some experiments.

PROJECTS

Distributed Agent Workflow Scheduling
Java, Maven, Kafka, Jenkins, SLF4J *May 2019 - Nov 2020*

- Mapped scheduling problems for agents to be solved by distributed constraint optimization(**DCOP**) framework.
- Built a **real-time messaging** system for distributed agents to coordinate with each other based on **Kafka**.
- Deployed maximum gain messaging(**MGM**) algorithm, an anytime algorithm allowing agents get results even if interrupted.
- Design and created APIs and schemas to integrate with other modules.

Multi-Room Chat Server(Web Application) **Github**
JavaScript, Node.js, HTML, CSS, MongoDB, Socket.IO *Jun 2020 - Aug 2020*

- Designed a real-time multi-room chat server using **Node.JS** and **Socket.IO**.
- Implemented both client-server and chat-server to realize the functions, saved chat history with **MongoDB**.
- Automated system deployment with **Docker**, and operated the online application on an **AWS EC2** Instance to improve the performance and make good management of the application.

Pysbatch **Github**
Python, SLURM, UNIX, Linux, Twine *Aug 2017 to Dec 2017*

- Implemented a python library wrapping UNIX/Linux system calls and **SLURM** command, allows users to set up complicated pipelines using only python and avoid Shell script.
- Packaged and released on PyPI and conda-forge platforms, downloaded over **3000** times.