Yanzhe Chen

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Education

Institute of Parallel and Distributed Systems, Shanghai Jiao Tong University 2014.9 - 2017.3
M.S. in Software Engineering, Advisor: Prof. Binyu Zang **GPA**: 2.81 / 3.3, **Rank**: 2 / 96

Shanghai Jiao Tong University 2010.9 - 2014.6
B.Eng. in Software Engineering **GPA**: 3.79 / 4.3, **Rank**: 8 / 99

Internship

Microsoft, China 2016.7 - 2016.9

Cloud & Enterprise Group SDE Intern

Designed and implemented an Azure cost monitoring service to help reduce team's expenses.

- Built as a SPA using the MEAN stack, shipping with the Docker.
- Recommendation (4 in 14) from judges in **Microsoft Young Hackathon** semi-final.

Rework time adjustment policy in HyperV timesync module.

- Refine timesync request handling to avoid sudden change of guest time.
- Related patch accepted by the **FreeBSD kernel**.

Projects

DrTM 2015 - 2016

Distributed Transaction Processing Research Project, C++

DrTM is a fast and general in-memory transaction system which provides high throughput and low latency.

DrTM leverages two hardware features called HTM and RDMA and designed a hardware-friendly protocol to boost the distributed transaction processing.

Related research papers were accepted by **SOSP'15** and **EuroSys'16** (*top conferences in system*).

DrTM is a *cooperated* project, my contributions are:

- Designed a lease-based shared lock using RDMA.
- Implemented a hybrid OCC protocol to preserve transaction generality.
- Designed an optimistic replication scheme to enable transaction recovery.

PowerLyra 2014 - 2015

Distributed Graph Computation Research Project, C++

Graph computation is widely used to reason about large-scale complex data in machine learning and data mining. PowerLyra is a performance extension to GraphLab, which is a open source graph computation framework.

PowerLyra discusses two ways of graph partition: Vertex-Cut and Edge-Cut and analyses their merits and demerits. It shows a hybrid partition to reduce redundant message and improves the performance dramatically.

Won the **Best Paper Award** from **EuroSys'15**.

PowerLyra is a *cooperated* project, my contributions are:

- Analysed the replication factor for existing partitioning strategies.
- Implemented a hybrid partitioning strategy which leverages both locality and parallelism.

GENE-MAP 2013 - 2014

Map Generalization Contest Project, C++

Map generalization is one of the core technologies for online map service. GENE-MAP provides an efficient generalization algorithm to make a trade off between precision and speed.

GENE-MAP exploits *iteration* and *greedy* strategy to ensure a good balance between precision and speed.

Won the **3rd Place Prize** from 2014 ACM GISCUP Competition

GENE-MAP is a *personal* project, my contributions are:

- Designed and implemented an iterative and greedy algorithm for map generalization.
- Parallelized the algorithm using the OpenMP library.

PUBLICATIONS

Fast and General Distributed Transactions using RDMA and HTM **EuroSys** 2016
Yanzhe Chen, Xinda Wei, Jiaxin Shi, Rong Chen and Haibo Chen.

Fast In-memory Transaction Processing using RDMA and HTM **SOSP** 2015
Xingda Wei, Jiaxin Shi, Yanzhe Chen, Rong Chen, Haibo Chen.

PowerLyra: Differentiated Graph Computation and Partitioning on Skewed Graphs **EuroSys** 2015
Rong Chen, Jiaxin Shi, Yanzhe Chen, Haibo Chen.

Greedy Map Generalization by Iterative Point Removal **SIGSPATIAL** 2014
Yanzhe Chen, Yin Wang, Rong Chen, Haibo Chen and Binyu Zang.

HONORS AND AWARDS

ACM EuroSys Best Paper Award 2015
First-class Academic Scholarship for M.S., Shanghai Jiao Tong University 2014
ACM SIGSPATIAL GISCUP 3rd Place 2014
Outstanding College Graduate of Shanghai Jiao Tong University 2014
XinDong Scholarship (second-class) of Shanghai Jiao Tong University 2013
Sun Hung Kai Properties Scholarship 2012
ShenYin and WanGuo Special Scholarship of Shanghai Jiao Tong University 2011

TEACHING ASSISTANT

Computer System Design and Implementation 2016
Distributed Systems 2015
Introduction to Programming 2013

SKILLS

- **Programming Languages**: Familiar with C++; Some experience with JavaScript, Bash, Java.
- **Systems and Tools**: Unix (4+ years); Familiar with Git, Vim.
- **English**: CET-6 561; Gave conference talk twice (Dallas and London).

陈彦哲

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教育背景

并行与分布式系统研究所, 上海交通大学 2014.9 - 2017.3

软件工程硕士, 导师: 臧斌宇教授 绩点: 2.81 / 3.3, 排名: 2 / 96

上海交通大学 2010.9 - 2014.6

软件工程学士 绩点: 3.79 / 4.3, 排名: 8 / 99

实习经历

微软中国 2016.7 - 2016.9

云计算与企业事业部 云计算创新中心，软件开发工程师

设计并实现了一套 Azure 开销监控服务，帮助团队节省支出。
该系统以单页应用（SPA）的形式提供服务，使用 MEAN 技术栈，支持 Docker 部署。

项目经历

DrTM 2015 - 2016

分布式事务处理 C++，科研项目

DrTM 是一个分布式的内存键值数据库，旨在分布式环境下提供高吞吐量、低延迟的事务支持。

DrTM 结合硬件事务内存（HTM）和远程直接内存存取（RDMA）两种硬件技术，设计了一套硬件友好的并发控制协议；在该协议的基础上构建了一个分布式内存键值数据库。基于此项目的两篇论文分别被 SOSP’15 和 EuroSys’16（均为计算机系统领域顶级会议）录用。

DrTM 是合作项目，我负责的工作有:

- 基于 RDMA 设计了一个带租约的共享锁
- 设计实现了一套基于乐观并发控制（OCC）的协议
- 解决了 HTM 和 RDMA 环境下事务难以备份的问题

PowerLyra 2014 - 2015

分布式图计算 C++，科研项目

图计算是针对具有复杂依赖关系和迭代计算特征的算法所设计的基于大数据的并行计算模型。PowerLyra 是开源分布式图计算框架 GraphLab 的改进版。

PowerLyra 分析了业界普遍采用的两种图划分方式：Vertex-Cut 和 Edge-Cut 的优劣势, 提出了 Hybrid-Cut 方法，针对不同类型的顶点采用不同的划分策略以及计算方式，减少了冗余消息的传递，有效地提升了性能。基于此项目的论文被 EuroSys’15 录用，并获得该届会议的最佳论文奖。

PowerLyra 是合作项目，我负责的工作有:

- 分析现有划分方法的冗余因子
- 合作实现了 PowerLyra 中的 Hybrid-Cut 方法

GENE-MAP 2013 - 2014

地图泛化 C++，比赛项目

地图泛化是在线地图服务的核心技术之一。GENE-MAP 权衡了泛化过程中的精准度和速度，设计了一种高效的泛化方法。

GENE-MAP 利用迭代和贪心的思想，在精准度和速度间做出权衡，为地图泛化提供了一种解决方案。该项目参加了 2014 年的 GISCUP 大赛并获得第三名的成绩，相关论文同时被 SIGSPATIAL’14 录用。

GENE-MAP 是个人项目，我完成的工作有:

- 设计并实现了一种基于迭代和贪心的泛化方法，利用 OpenMP 实现了算法的并行

论文发表

Fast and General Distributed Transactions using RDMA and HTM **EuroSys** 2016
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Fast In-memory Transaction Processing using RDMA and HTM **SOSP** 2015
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PowerLyra: Differentiated Graph Computation and Partitioning on Skewed Graphs **EuroSys** 2015
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Greedy Map Generalization by Iterative Point Removal **SIGSPATIAL** 2014
Yanzhe Chen, Yin Wang, Rong Chen, Haibo Chen and Binyu Zang.

获奖情况

ACM EuroSys 最佳论文奖 2015
上海交通大学硕士一等学业奖学金 2014
ACM SIGSPATIAL GISCUP 第三名 2014
上海交通大学优秀毕业生 2014
上海交通大学心动二等奖学金 2013
新鸿基地产郭氏基金奖助学金 2012
申银万国奖学金 2011

助教工作

计算机系统设计和实现 2016
分布式系统 2015
程序设计 2013

专业技能

- 编程语言: 熟练使用 C++，有 JavaScript, Bash, Java 的使用经历
- 系统工具: 4 年以上的 Unix 使用经验，了解 Git，Vim 等开发工具
- 英语水平: CET-6 561 分，在国际学术会议上做过两次演讲