Xiuwen Zheng

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Education

- **University of California, San Diego** Oct. 2020 - Expected in 2025
  PhD in Computer Science; Advisors: Dr. Amarnath Gupta and Prof. Arun Kumar
  Research interest: data management; polystore database; graph database; machine learning system; AI for DB.
- **University of California, San Diego** Sep. 2017 - Mar. 2019
  M.S. in Computer Science; GPA: **3.75**/4
- **University of Electronic Science and Technology of China** Sep. 2013 – Jul. 2017
  B.S. in Communication Engineering; GPA: **3.95**/4 (**90.77**/100)

Preprints & Publications

- **News Meets Microblog: A Retriever-Generator Hashtag Annotation Framework**
  Xiuwen Zheng, Dheeraj Mekala, Amarnath Gupta, and Jingbo Shang. Under review.
- **An Algebraic Approach for High-level Text Analytics**
  Xiuwen Zheng, and Amarnath Gupta. SSDBM 2020.
- **Social Network of Extreme Tweeters: A Case Study**
  Xiuwen Zheng, and Amarnath Gupta. ASONAM 2019.
- **Scalable Community Detection over Geo-Social Network**
  Xiuwen Zheng, Qiyu Liu, and Amarnath Gupta. LENS@SIGSPATIAL 2019 (**Best Presentation Award**)
- **Social-Aware Optimal Electric Vehicle Charger Deployment on Road Network**
  Qiyu Liu, Yuxiang Zeng, Lei Chen, and **Xiuwen Zheng**. SIGSPATIAL 2019.

Selected Projects

- **AWESOME Polystore System** Sept. 2019 - Present
  Supervisor: Dr. Amarnath Gupta and Prof. Arun Kumar
  - **Goal**: Build a tightly-coupled polystore system that efficiently processes analytical queries over heterogeneous data stores like Neo4j (graph), Postgres (relation) and Solr (text).
  - **Current Progress**:
    - **ADIL polystore language:** Designed a formal and powerful language named ADIL which supports 1) native queries against both DBMSs and in-memory data models including graph, relation and text; 2) high order functions such as Map, Reduce and Filter; 3) a rich set of advanced analytical functions; 4) strict syntax and type check at compile time.
    - **End-to-end Execution:** The AWESOME system takes a workload script written by users, then parses and validates it, generates logical plan and physical plan, and applies query optimization techniques to get an optimal execution plan and execute the workload.
    - **Query Optimization:** Designing a novel algorithm that hybridizes pipeline and data-parallelism to minimize the makespan of workloads.
- **Graph Database Query Engine Project**
  Project Website: https://github.com/xiz675/CSE291
  - **Graph QL Support**: Supported `Cypher` as query language and built parser based on ANTLR.
  - **Physical Storage**: The whole graph database is partitioned into several relations stored by a typical on-disk index on the top of MySQL. Besides, several label-based indexes are built for accelerating query processing.
  - **Query Optimizer**: Designed a join plan optimizer based on Wander Join which is the 2016 SIGMOD best paper.

Awards

- **NSF Travel Grants for SIGSPATIAL 2019** 2019
- **1st Class Scholarship for Academic Excellence (5%), UESTC** 2015, 2016
- **Meritorious Winner (top 10%) at 18th annual Interdisciplinary Contest in Modeling (ICM)** 2016
- **National Scholarship (for 0.2% Chinese undergraduates)** 2014

Skills

- **Programming**: Java, Python, SQL, Cypher, Matlab, R, C
- **Big Data Tools**: Spark, Hive, D3, Neo4j
- **Parser Generator**: JavaCC, ANTLR
- **Others**: Maven, Git, LaTeX