

Overview

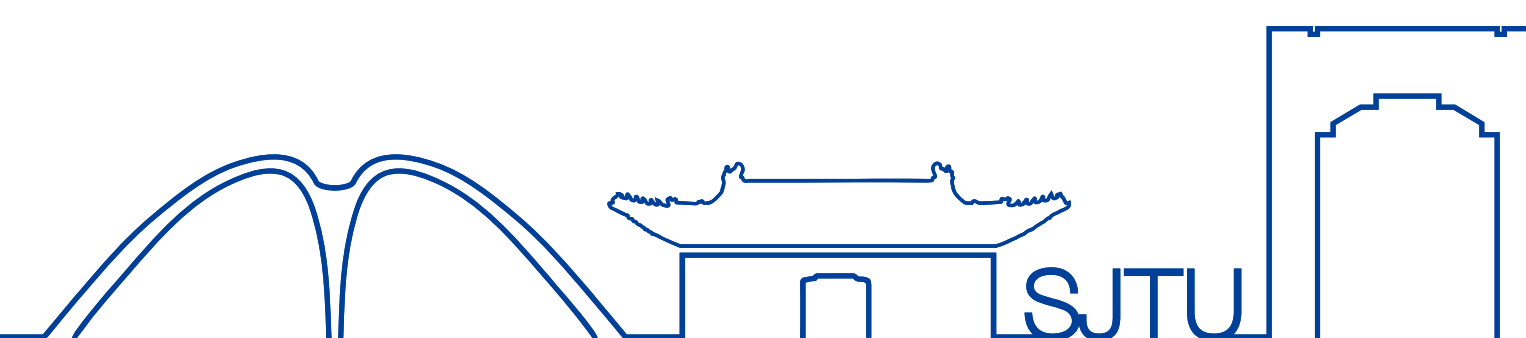


ASAF 2017

Shanghai, 3-4 June 2017

The SJTU ACM honored class invites you to participate in the 8th ACM-Class Student Academic Festival. ASAF 2017 will take place in June 3-4, 2017 at the East Middle Hall #1 on the campus of Shanghai Jiao Tong University, China.

Committee



The main chairs of ASAF2017
are the following:

General Chair (GC)	Yong Yu - Professor at Department of Computer Science, Shanghai Jiao Tong University
Co-Chair (PC)	Weinan Zhang - Assistant professor in Department of Computer Science, Shanghai Jiao Tong University; - Alumni of ACM Honored Class of 2011
Local Organizing Team	
Scientific Secretariat	Runzhe Yang, Tianyao Chen, Yurong You - Undergrads at ACM Honored Class of 2018
Technical Secretariat	Zhijian Liu, Bicheng Gao, Huichen Li - Undergrads at ACM Honored Class of 2018



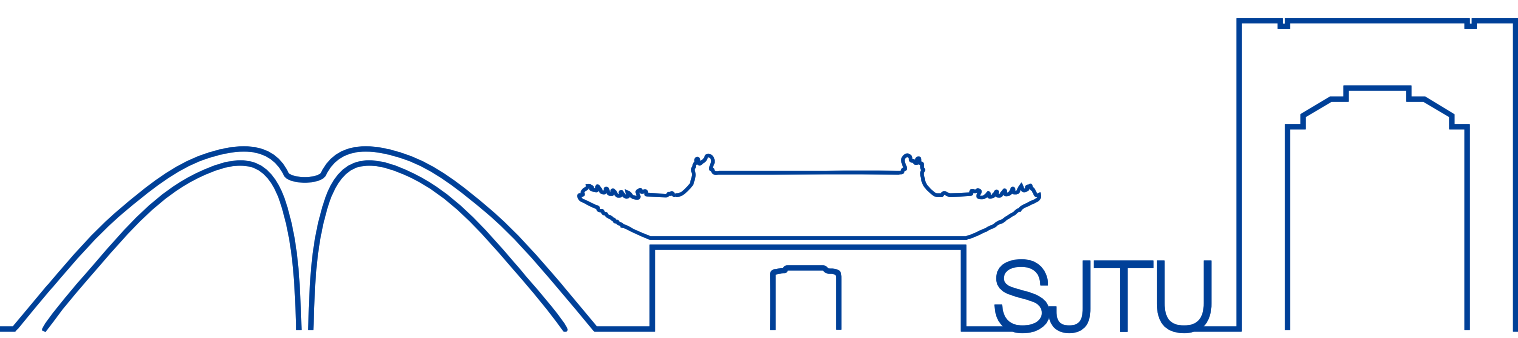
Schedule

Saturday 3rd June

	Main Auditorium	Room 1	Room 2
09:00-09:15	REGISTRATION		
09:15-09:30	Opening session		
09:30-10:40	Tutorial (Theory field) Xiao Tao: Economics: A Computational View		
10:40-10:55	COFFEE BREAK		
10:55-12:05	Tutorial (System field) Jian Weng: A Quick Tour to OS, Architect, and Networking		
12:05-14:00	LUNCH		
14:00-15:00	Student Paper Session 1A: (ML)	Student Paper Session 1B: (BioInfos)	ACM ICPC Session 1C: (ICPC)
15:00-15:15	COFFEE BREAK		
15:15-16:15	Student Paper Session 2A: (NLP)	Student Paper Session 2B: (Security)	Student Paper Session 2C: (Vision)
16:15-16:45	Posters & Demos		

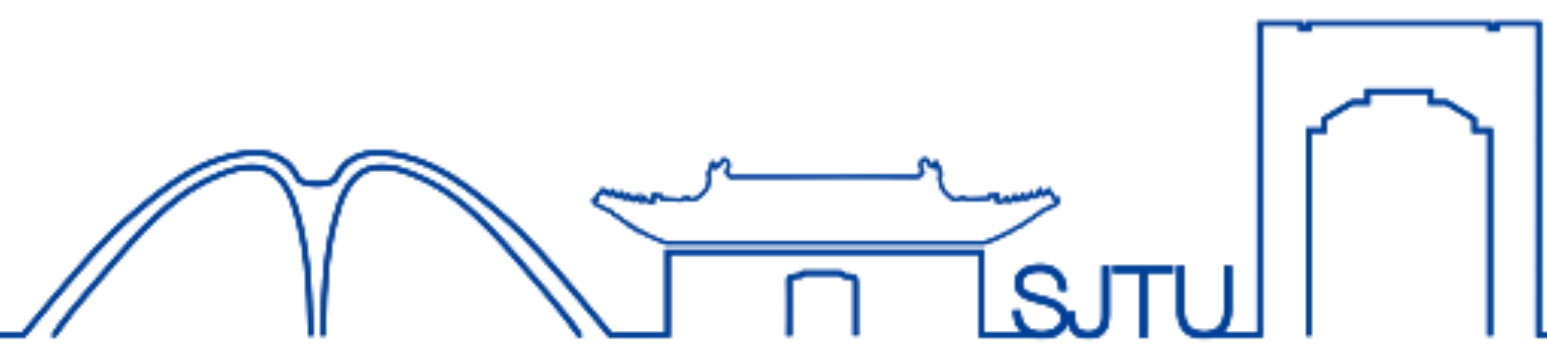


Schedule



Sunday 4th June

	Main Auditorium	Outdoors
09:00-09:30	Review & Opening Remarks: Yong Yu: the 15-year history of ACM Class	
09:30-10:40	Invited talk 1: Zhihua Zhang: Second-order Approximation Algorithms for Large scale optimization problems	
10:40-11:10		Group Photo
11:10-12:20	Invited talk 2: Nick Gravin: Testing Markov Chains: Is the casino really using a riffle shuffle?	
12:20-13:30	LUNCH	
13:30-14:40	Invited talk 3: Zheng Zhang: Brain-like AI: Gaps and Bridges	
14:40-14:55	COFFEE BREAK	
14:55-16:05	Invited talk 4: Feifei Li: Interactive and Online Analytics of Large Spatio-Temporal Data	
16:05-16:20	Closing session	



Day 1

Main Auditorium

Tutorial
09:30-10:40

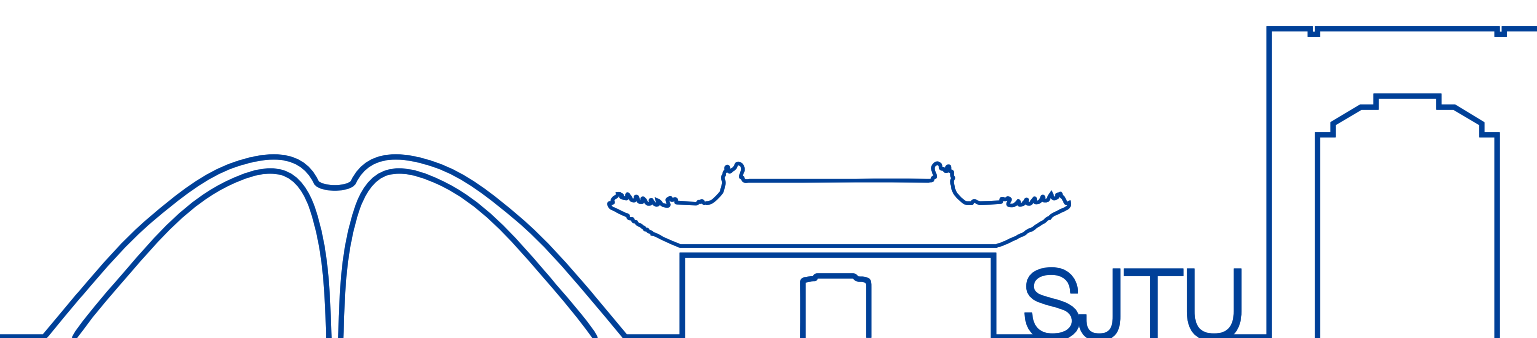
Title: Economics: A Computational View
Speaker: Xiao Tao

Abstract:

Theoretical computer science, dating back from almost a century ago, focus on mathematical problems under the theory of computation. It lays foundations of computer science subject: it provides basic theory and tools for actual machinery to work in practice. TCS covers a wide variety of topics, including algorithms, data structures, computational complexity, computational economics, cryptography, machine learning, etc. During the past two decades, computational economics, a subject working at the interface of computer science and economics, has developed a remarkable number of points of contact between the two fields.

In this tutorial talk, the speaker will first roughly introduce theoretical computer science history, and then provide case studies from computational economics (mostly from network routing game, mechanism design) to give everyone a good taste about this research area. Some issues appeared in these case studies can be quite counterintuitive but true.

Day 1



Tutorial
10:55-12:05

Title: A Quick Tour to OS, Architect, and Networking

Speaker: Jian Weng

Abstract:

Computer system is essentially abstraction. It bridges the gap between low-level details and high-level ideas, which allows users to focus on what they want to do without being distracted by those details. `System' covers a wide range of designs: Compiler, ML (machine learning) framework, OS (operating system), networking, distributed system, and etc. A good system will affect the efficiency critically.

In this tutorial lecture, the speaker will give a quick tour to the main points taught in Computer Architecture, Operating System, and Networking so that the freshman and sophomore students will have some basic ideas on the topics given later.

Session 1A
Machine Learning

14:00-14:20

Title: Learning Neural Programs To Parse Programs

Speaker: Xinyun Chen



Day 1

14:20-14:40 **Title: Relaxation Methods for Constrained Matrix Factorization Problems: Solving the Phase Mapping Problem in Materials Discovery**

Speaker: Junwen Bai

14:40-15:00 **Title: Communication Lower Bounds for Distributed Convex Optimization: Partition Data on Features**

Speaker: Zihao Chen

Session 2A Computational Linguistics

15:15-15:35 **Title: Learning to Ask: Neural Question Generation for Reading Comprehension**

Speaker: Junru Shao

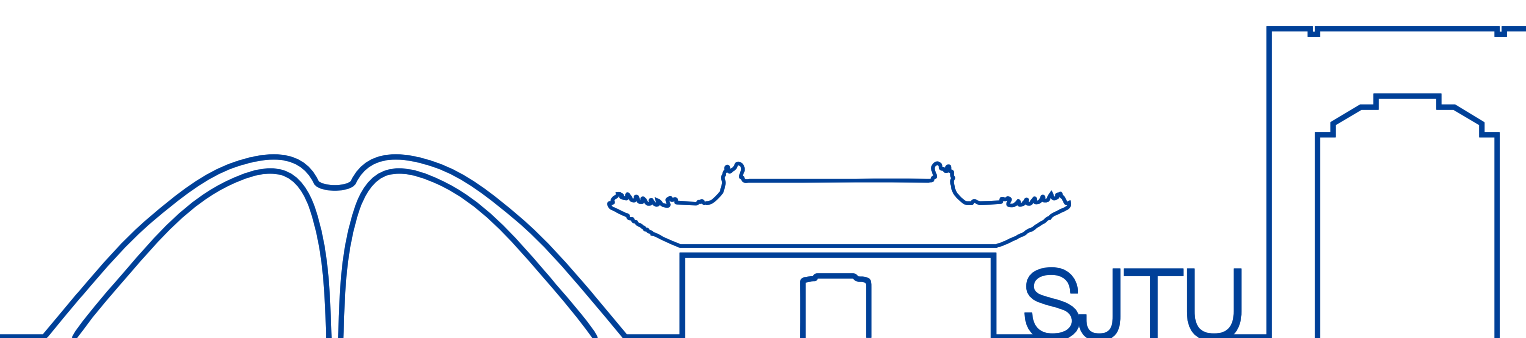
15:35-15:55 **Title: Chunk-based Decoder for Neural Machine Translation**

Speaker: Jingtao Yao

15:55-16:15 **Title: On-line Dialogue Policy Learning with Companion Teaching**

Speaker: Runzhe Yang

Day 1



Room 1

Session 1B Bioinformatics

- 14:00-14:20 **Title: iRegNet3D: three-dimensional integrated regulatory network for the genomic analysis of coding and non-coding disease mutations**
Speaker: Yaoda Zhou
- 14:20-14:40 **Title: DTMiner: identification of potential disease targets through biomedical literature mining**
Speaker: Fan Wang
- 14:40-15:00 **Title: Deep Multi-species Embedding**
Speaker: Di Chen

Session 2B Computer Vision & Graphics

- 15:15-15:35 **Title: Generative Hierarchical Structure Learning of Sparse FRAME Models**
Speaker: Yifei Xu
- 15:35-15:55 **Title: Isometric UV-maps generation using visibility signal**
Speaker: Min Wang



Day 1

Room 2

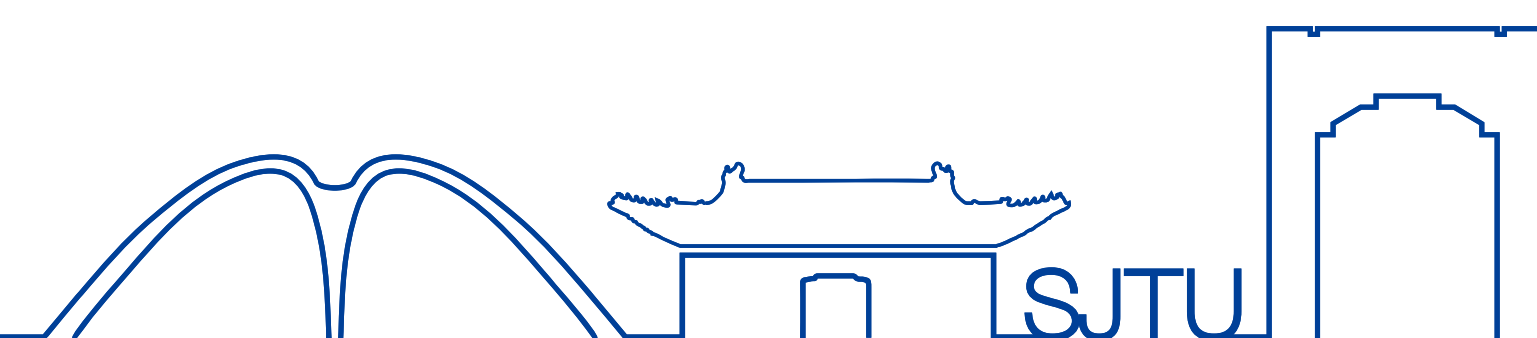
Session 1C ACM-ICPC

- | | |
|-------------|---|
| 14:00-14:20 | Title: 交大非一队ACMer的完整历程
Speaker: Yan Ji |
| 14:20-14:40 | Title: 从“三流”OI选手到“一流”ACM选手
Speaker: Yanpei Liu |
| 14:40-15:00 | Title: 从Regional到Final, 我在ACM队的成长经历
Speaker: Wenhao Li |

Session 2C Privacy & Security

- | | |
|-------------|---|
| 15:15-15:35 | Title: Solidus: Confidential Blockchain Transactions via PVORMs
speaker: Yan Ji |
| 15:35-15:55 | Title: Side-Channel Attacks on Shared Search Indexes
Speaker: Jiahui Lu |
| 15:55-16:15 | Title: Insights into future cryptocurrency consensus schemes
Speaker: Shuyang Tang |

Day 2



Main Auditorium

Opening Remarks
09:00-09:30

Title: The 15-year history of ACM Class
Speaker: Yong Yu

Invited Talk
09:30-10:40

Title: 大规模优化问题的近似二阶算法
Speaker: 张志华

Abstract:

许多机器学习问题都可以被定义为一个优化问题，因此求解大规模的优化问题是机器学习一个非常具有挑战的方向。这个报告讨论一类近似二阶算法，它包含子采样牛顿方法，概略牛顿方法以及非精确牛顿方法等。这类方法具有标准牛顿方法的超线性收敛率，但同时它的计算复杂度则相对较低。

Invited Talk
11:10-12:20

Title: Testing Markov Chains: Is the casino really using a riffle shuffle?
Speaker: Nick Gravin

Abstract:

A commonly used technique in casinos to shuffle decks of 52 cards is the riffle shuffle: first, the dealer cuts the deck into two piles, then the shuffler successively drops cards from the bottom of each pile to form a new pile. The classic GSR-model proposed in 1955 by Gilbert and Shannon describes the randomness in the riffle shuffle process. But how do



Day 2

we verify that a specific dealer shuffles according to the model? How many trials are needed to test that dealer's shuffles conform to GSR-model? These questions can be formulated as “identity testing problem” in the classic distribution testing framework. However, standard distribution testing assumes access to i.i.d. samples from the distributions that are being tested, whereas in our problem samples are generated through a Markov chain. In this work we initiate the study of Markov chain testing, assuming access to a single sample from the Markov Chains that are being tested. In particular, we get to observe a single trajectory X_0, \dots, X_t, \dots of an unknown Markov Chain M , for which we do not even get to control the distribution of the starting state X_0 . Our goal is to test whether M is identical to a model Markov Chain M' .

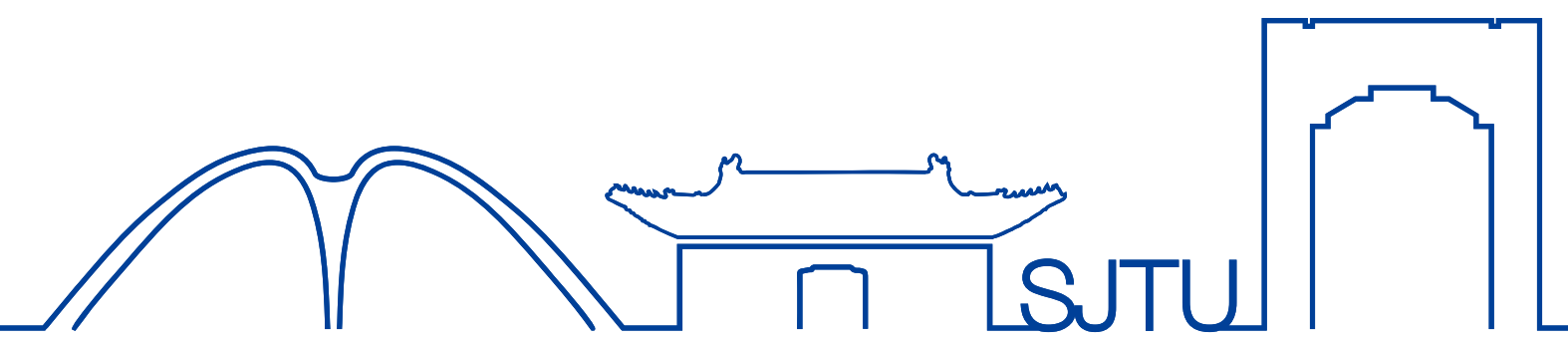
Invited Talk
13:30-14:40

Title: Brain-like AI: Gaps and Bridges
Speaker: Zheng Zhang

Abstract:

The success of deep learning has borrowed principles and ideas from neuroscience. This does not automatically justify the claim that today's deep learning system is brain-like. The other related question is whether does it need to be. In this talk, I will share my thoughts on this topic. I will argue that brain-like AI is not only necessary, but also possible, but deploying such principle is likely only in sub- and constrained domains. From easy to harder cases, I will illustrate with examples, and along the way identify the gaps and challenges, as well as possibilities.

Day 2



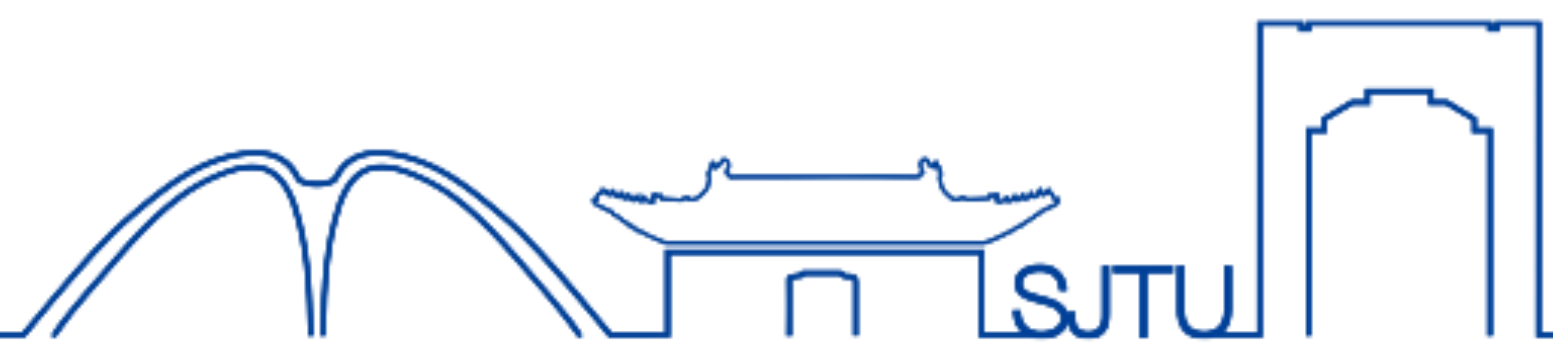
Invited Talk
14:55-16:05

Title: Interactive and Online Analytics of Large Spatio-temporal Data

Speaker: Feifei Li

Abstract:

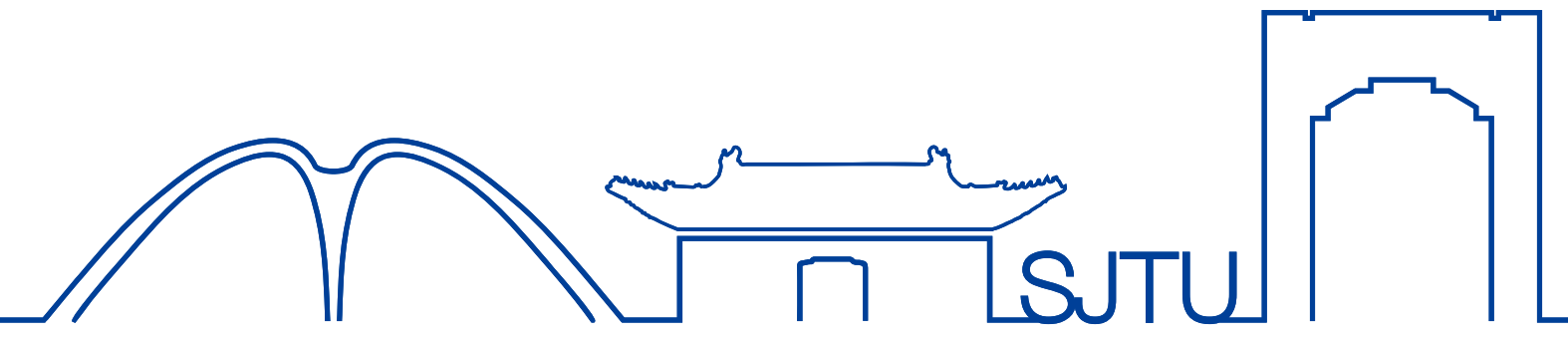
Large spatial and spatio-temporal data are ubiquitous (e.g., sensor readings, mobile app data). Supporting interactive queries and analytics over such data is a critical requirement in many data-driven applications. We will present the Simba system that offers scalable and efficient in-memory spatial query processing and analytics for big spatial and spatio-temporal data. Simba extends the Spark SQL engine to support rich spatial queries and analytics through both SQL and the DataFrame API (e.g., spatial join, knn join, trajectories), with an effective query optimizer leveraging its indexing support and novel spatial-aware query optimizations. Furthermore, Simba has incorporated our latest results from online aggregation and analysis, and is able to provide online analytics that explores the accuracy-efficiency tradeoff. Lastly, we will also present ongoing extensions to Simba that explores spatio-temporal learning and sentiment analysis over large data.

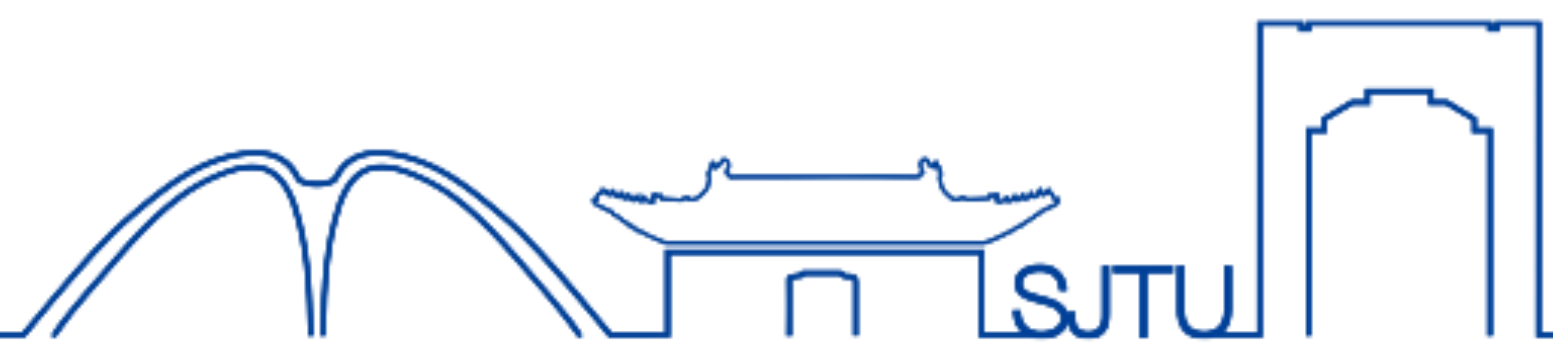


Notes



Notes





Notes



Notes

