

Kasra Jamshidi

Parallel & Distributed Computing Lab
Simon Fraser University, BC, Canada

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<https://kjamsh.com>

RESEARCH INTERESTS

Large Scale Graph Mining Systems, Parallel Graph Algorithms, Graph Query Languages.
Distributed Computing, Byzantine Fault Tolerance.

EDUCATION

- | | |
|---|----------------|
| Simon Fraser University | 2019 – Present |
| <ul style="list-style-type: none">• PhD in Computing Science, Advisor: Keval Vora• Thesis: <i>Towards Scalable Subgraph Mining Systems</i> | |
| Simon Fraser University | 2014 – 2019 |
| <ul style="list-style-type: none">• BSc Honours in Computing Science & Minor in Mathematics, Advisor: Keval Vora• Thesis: <i>Disk-Based Graph Mining</i> | |

PUBLICATIONS

- | | |
|--|----------------|
| Accelerating Graph Mining Systems with Subgraph Morphing
Kasra Jamshidi, Guoqing Harry Xu, Keval Vora.
European Conference on Computer Systems, May 2023. | EuroSys '23 |
| Anti-Vertex For Neighborhood Constraints In Subgraph Queries.
Kasra Jamshidi, Mugilan Mariappan, Keval Vora.
ACM Workshop on GRADES-NDA, June 2022. | GRADES-NDA '22 |
| A Deeper Dive Into Pattern-Aware Subgraph Exploration With Peregrine.
Kasra Jamshidi, Keval Vora.
SIGOPS Operating Systems Review 55, 1, July 2022. | OSR '21 |
| Peregrine: A Pattern-Aware Graph Mining System.
Kasra Jamshidi, Rakesh Mahadasa, Keval Vora.
European Conference on Computer Systems, April 2022. | EuroSys '20 |

EXPERIENCE

- | | |
|--|----------------|
| Research Assistant at Parallel & Distributed Computing Lab | 2019 – Present |
| <ul style="list-style-type: none">• Developed pattern-aware processing and programming model for graph mining systems• Developed novel constructs <i>anti-edge</i> and <i>anti-vertex</i> to enable complex pattern queries• Research graph algorithms and systems techniques for increasing performance and scalability of graph mining workloads• Technologies: C++, Python, Docker | |

EXPERIENCE (CONT'D)

Undergraduate Research Assistant at Parallel & Distributed Computing Lab 2018 – 2019

- Developed a distributed graph mining model without the synchronization requirements of Arabesque (SOSP '15), and implemented a proof-of-concept using Java, Scala, and the Akka actor framework
- Implemented the DualSIM (SIGMOD '16) disk-based pattern-matching algorithm in C++

Object Clustering Robot Swarm Research at Autonomy Lab 01.2018 – 06.2018

- Simplified existing compute-free, communications-free robot design to be deterministic, resulting in cheaper robot swarms that finish object clustering tasks 2 – 3× faster
- Observed novel environmental manipulation method to further improve clustering speed by 5×

Founding Developer at Polly Chat 2017 – 2018

- Launched a web application to connect native speakers of different languages in timed chatrooms
- Technologies: Vagrant, nginx, Lapis, PostgreSQL, Redis

Software Trainee at Nexedi Inc. 2016 – 2017

- Published 3 user tutorials for Nexedi's distributed out-of-core processing system Wendelin
- Implemented user-friendly API for Wendelin, enabling a familiar Python data science interface that hides underlying parallelism and disk-based semantics
- Prepared tech demo for Wendelin to assist a sales presentation by the CEO to industry leaders
- Technologies: Python, JavaScript, Ansible

OTHER ACTIVITIES

Reviewing for Journals & Conferences

EuroSys '20, ATC '20, OSDI '20, PACT '20, ASPLOS '21, ICS '21, ATC '21, OSDI '21, ASPLOS '22, ATC '22

Student Mentoring

- Rakesh Mahadasa (MSc), *Incremental Graph Mining*
- Jeremy Schwartz (undergraduate), *Graph Pattern Generation*
- Hao Henry Fang (undergraduate), *Pattern-Aware Graph Mining on Weighted Graphs*
- Daniel Gomes Maia Filho (undergraduate), *Workload-Balancing in Incremental Graph Mining*

Computing Science Student Society President 2018 – 2019

- Organized week-long student trips to Silicon Valley for tours and networking events at Google, Apple, Stripe, and other companies in the area
- Organized tour and networking night for students and alumni at Electronic Arts Canada
- Taught student workshops on foundational technologies for undergraduates: Linux and git
- Organized a research hackathon where teams experiment with purposefully over-engineered software
- Directed executive team in event-planning, financial management, and engagement testing

HONOURS AND AWARDS

SFU Computing Science Research Day Best Poster Award 2022

SFU Computing Science Graduate Fellowship 2022

Clark Wilson LLP Graduate Scholarship	2022
SFU Computing Science Graduate Fellowship	2021
SFU Computing Science Research Day Best Poster Award	2020
SFU Computing Science Graduate Fellowship	2019
SFU Vice President-Research Undergraduate Student Research Award	2018
Gordon M. Shrum Major Entrance Scholarship	2014