

# Kasra Jamshidi

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

kjamshid@cs.sfu.ca  
<https://kjamsh.com>

## RESEARCH INTERESTS

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

## EDUCATION

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**Simon Fraser University** 2019 – Present

- PhD in Computing Science, Advisor: Keval Vora
- Thesis: *Towards Scalable Subgraph Mining Systems*

**Simon Fraser University** 2014 – 2019

- BSc Honours in Computing Science & Minor in Mathematics, Advisor: Keval Vora
- Thesis: *Disk-Based Graph Mining*

## PUBLICATIONS

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**Anti-Vertex For Neighborhood Constraints In Subgraph Queries.** GRADES-NDA '22  
Kasra Jamshidi, Mugilan Mariappan, Keval Vora.  
ACM Workshop on GRADES-NDA, June 2022.

**A Deeper Dive Into Pattern-Aware Subgraph Exploration With Peregrine.** OSR '21  
Kasra Jamshidi, Keval Vora.  
SIGOPS Operating Systems Review 55, 1, July 2022.

**Peregrine: A Pattern-Aware Graph Mining System.** EuroSys '20  
Kasra Jamshidi, Rakesh Mahadasa, Keval Vora.  
European Conference on Computer Systems, April 2022.

## EXPERIENCE

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**Research Assistant at Parallel & Distributed Computing Lab** 2019 – Present

- Developed pattern-aware processing and programming model for graph mining systems
- Developed novel constructs *anti-edge* and *anti-vertex* to enable complex pattern queries
- Research graph algorithms and systems techniques for increasing performance and scalability of graph mining workloads
- Technologies: C++, C, Python, Docker

**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++

## EXPERIENCE (CONT'D)

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**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

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### 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

- Jeremy Schwartz (undergraduate), *Graph Pattern Generation*
- Henry Fang (undergraduate), *Pattern-Aware Graph Mining on Weighted Graphs*
- Rakesh Mahadasa (MSc), *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

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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