

Serafeim (Makis) Papadias

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Profile

PhD in Computer Science with expertise in dynamic graph analytics and streaming algorithms, specializing in community detection and scalable graph mining. Experienced educator with a proven track record of teaching database systems, programming, and data science courses at leading institutions (TU Berlin, HKUST). Successfully supervised 11 student theses and published research in top venues (VLDB, ICDE). Skilled in developing novel, efficient algorithms for processing large-scale dynamic graphs while maintaining a strong commitment to student-centered learning. Seeking to combine research expertise in graph algorithm optimization with passionate teaching to inspire the next generation of computer scientists.

Education

06/2019 – 09/2024

Berlin, Germany

Computer Science | Doctor of Philosophy (Ph.D.)

Technical University of Berlin

Thesis: Mining Highly Dynamic Graphs

Advisor: Prof. Volker Markl

Grade: Magna Cum Laude

02/2016 – 09/2018

Hong Kong, Hong Kong

Computer Science | Master of Philosophy (M.Phil)

Hong Kong University of Science & Technology

Thesis: Massively Parallel Output-optimal Streaming Joins

Advisor: Prof. Ke Yi

GPA : 3.817/4.00

10/2009 – 09/2015

Athens, Greece

Electrical and Computer Engineering | Diploma (M.Eng)

National Technical University of Athens

Thesis: Trajectory-aware Load Adaption in GeoStreaming

Advisor: Kostas Patroumpas

Major: Computer Science, Minor: Mathematics

GPA: 8.73/10 (top 7%)

Work Experience

06/2019 – 09/2024

Berlin, Germany

Research Associate & Teaching Fellow

Technical University of Berlin

Spearheaded research initiatives on streaming graph data management under the supervision of Prof. Volker Markl

Managed teaching responsibilities across various courses, including:

- DBPRA: Database Practicum (Spring 2021, 2022)
- DBSEM: DB Systems Seminar (Spring 2021-2024, Fall 2023)
- DW: Data Warehouses (Fall 2020-2022)
- BDAPRO: Big Data Analytics Project (Mentor, Fall 2020)
- ROC: Research Oriented Course (Fall 2019)

Oversaw and guided 11 student theses (7 Bachelor's, 4 Master's) focusing on

Work Experience

dynamic graph analytics, community detection, and database systems.

02/2016 – 09/2018
Clear Water Bay,
Hong Kong

Research Assistant & Teaching Fellow Hong Kong University of Science & Technology

Conducted extensive research on worst-case optimal streaming join algorithms under the guidance of Prof. Ke Yi

Assisted in teaching core computer science courses as a Teaching Assistant for:
- COMP2011: Introduction to Object-Oriented Programming (Fall 2017, Spring 2018)
- COMP3311: Database Management Systems (Spring 2017)

10/2015 – 12/2015
Clear Water Bay,
Hong Kong

Research Assistant (intern) Hong Kong University of Science & Technology

Conducted research with Prof. Dimitris Papadias

Publications

05/2024

Overlapping Community Detection on Dynamic Graphs Under Submission

Serafeim Papadias, Grigorios Loukides, Zoi Kaoudi, and Volker Markl

Code: <https://github.com/spapadias/communis>

09/2023

Counting Butterflies in Fully Dynamic Bipartite Graph Streams ICDE 2024

Serafeim Papadias, Zoi Kaoudi, Varun Pandey, Jorg Quiane, Volker Markl

Code: <https://github.com/spapadias/abacus>

07/2022

Space-Efficient Random Walks on Streaming Graphs VLDB 2023

Serafeim Papadias, Zoi Kaoudi, Jorge Quiane, Volker Markl

Code: <https://github.com/spapadias/wharf>

08/2020

In-Place Updates in Tree-Encoded Bitmaps SSDBM 2022

Marcellus Prama Saputra, Eleni Tzirita Zacharatou, Serafeim Papadias, Volker Markl

Code: <https://github.com/marcellus-saputra/Thuja>

08/2019

Tunable Streaming Graph Embeddings at Scale PhD@VLDB 2020

Serafeim Papadias

YouTube: <http://tiny.cc/vfqszz>

03/2019

Trajectory-aware Load Adaption for Continuous Traffic Analytics SSTD 2019

Kostas Patroumpas, Serafeim Papadias

Code: <https://github.com/spapadias/rienNeVaPlus>

03/2019

Streaming HyperCube: A Massively Parallel Stream Join Algorithm EDBT 2019

Yuan Qiu, Serafeim Papadias, Ke Yi

Skills

- COMPUTER SKILLS

C++

PROFESSIONAL

Java

PROFESSIONAL

Julia

Python

PROFESSIONAL

Apache Spark & Flink

LIMITED

PostgreSQL

PROFESSIONAL

OpenMP

LIMITED

LaTeX

PROFESSIONAL

- LANGUAGES

Greek (Native)

NATIVE

English (Professional)

FULL

Spanish (Elementary)

LIMITED

Awards

02/2016

HKUST Postgraduate Studentship Hong Kong University of Science & Technology

Postgraduate scholarship from Hong Kong University of Science and Technology

11/2009

Great Moment for Education Eurobank

Eurobank Award for the best student of each high school

03/2008

Distinction in Panhellenic Mathematics Society's Contest Panhellenic Mathematics Society

Certificates

10/2024

Learning Julia LinkedIn

<https://tinyurl.com/muncy5nk>

08/2015

Big Data XSeries UC BerkeleyX at edX

Link1: <https://shorturl.at/dhuZY>

Link2: <https://shorturl.at/PcJ0e>

Strengths

Problem-Solving

Analytical Thinking

Algorithms

Graphs

Mentorship

Thesis Supervision

Technical Writing