

Michael (Michail) Mathioudakis

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EDUCATION

- 2006 to 2012: University of Toronto
Ph.D. in Computer Science (Candidate - Expected Graduation Date: Spring 2012)
Thesis: 'Detecting Prominent Patterns of Activity in Social Media'
Advisor: Prof. Nick Koudas
- 2001 to 2006: National Technical University of Athens (NTUA)
B.Eng. in Electrical and Computer Engineering, July 2006
Thesis: 'A study on workload-aware wavelet synopses for point and range-sum queries'
Advisor: Prof. Timos Sellis

INTERNSHIPS

Summer 2011: Microsoft Research, Mountain View.

Interactions on social networks are voluminous and message-based (e.g. status updates on Twitter or Facebook). Our work focused on personalizing social streams, taking into account user interactions, interests and social profile activity.

Summer 2010: Yahoo! Research, Barcelona.

We developed SPINE, an algorithm that identifies substructures of a social network that are crucial for the dissemination of information over the network. Our work appeared in the proceedings of SIG KDD 2011 [1].

RESEARCH & INTERESTS

In my PhD, I propose and study efficient techniques for the analysis of large datasets. In particular, I focus on data-mining problems that arise in the context of social media streams. My work defines and quantifies notions of importance for content [2, 3, 4], users [5], and user interactions [1] in a social setting. Based on those definitions, I propose efficient algorithms to detect important instances of activity. Moreover, I developed Twittermonitor [2], a system that incorporates some of the aforementioned algorithms to perform real-time trend detection over the Twitter stream.

In addressing the technical challenges I encountered, my research consisted of three prevailing themes, namely (a) developing efficient algorithms to solve computational problems, (b) selecting appropriate models to represent complex datasets, and (c) using statistical methods to analyze them. Moreover, building an end-to-end content analysis system [2] allowed me to gain hands-on experience with the storage and analysis of big datasets. I was exposed to back-end technologies (such as MongoDB), front-end technologies (Dojo and JavaScript), and diverse Java libraries and APIs.

As the next step in my career, I wish to join a team where I'll have the opportunity to use - and expand - the technical skills I acquired during my studies, using modern technologies to tackle problems of large-scale data management, analysis, and modeling, and build scalable systems.

PUBLICATIONS

1. *Sparsification of Influence Networks*, SIGKDD 2011
With Aristides Gionis, Francesco Bonchi, Carlos Castillo, Antti Ukkonen.
2. *Trend Detection over the Twitter Stream*, SIGMOD 2010
With Nick Koudas.

3. *Identifying, Attributing and Describing Spatial Bursts*, PVLDB 2010
With Nilesh Bansal and Nick Koudas.
4. *Early Online Identification of Attention Gathering Items in Social Media*, WSDM 2010
With Nick Koudas and Peter Marbach.
5. *Efficient Identification of Starters and Followers in Social Media*, EDBT 2009
With Nick Koudas.
6. *A study on workload-aware wavelet synopses for point and range-sum queries*, DOLAP 2006
With Dimitris Sacharidis and Timos Sellis.

GRADUATE COURSES

2009	Statistical Methods for Data Mining and Machine Learning
2008	Web Search and Mining Combinatorial Methods
2007	System Modeling and Analysis Linear and Semidefinite Programming & Combinatorial Optimization Computational Structural Biology
2006	Advanced Database Management Systems Computational Complexity Theory Machine Learning

TEACHING ASSISTANTSHIPS

2012, '11 - '08	Introduction to Database Systems
2011, '07	Introduction to Computer Science (Java, Python)
2010	System Modeling and Analysis (Graduate course)
2006	Introduction to Computer Programming (Java)

PROGRAMMING SKILLS

Languages: Java, C#, C++	Scripting: Python, JavaScript
Statistical: R, Matlab	DBMS: SQLServer, MySQL, PostgreSQL, MongoDB

HONORS AND AWARDS

2011	SIGKDD Student Travel Award (Offered to students who are first authors of accepted papers).
2004 to 2006	Scholarship, Ergazakio Foundation (Offered every year to five NTUA students born in the city of Heraklion).
1998 to 2000	Greek Mathematical Competitions: <i>Thales</i> and <i>Euclid</i> Hellenic Mathematical Society. Five first prizes, one second prize

LANGUAGE DEGREES

1999	Certificate of Proficiency in English University of Michigan
1999	Diploma of Studies in French Language (D.E.L.F. 1) French Ministry of Education