

CURRICULUM VITAE

Dr. Panagiotis Bouros
(September 19, 2018)

CONTACT INFORMATION

Institute of Computer Science
Johannes Gutenberg University Mainz
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EDUCATION

National Technical University of Athens, Greece

PhD, School of Electrical and Computer Engineering (2005–2011)

- Title: *Evaluating Queries over Route Collections*
- Supervisors: Prof. Yannis Vassiliou and Prof. Timos Sellis

Diploma, School of Electrical and Computer Engineering (1998–2003)

- Diploma thesis: *Query Language for Hierarchical Structures*
- Supervisor: Prof. Timos Sellis

RESEARCH INTERESTS

- Data management
- Query processing
- Complex data types including spatial, temporal, text and graphs
- Routing and optimization problems on road networks

RESEARCH EXPERIENCE

Johannes Gutenberg University Mainz, Germany (2018–now)

Assistant Professor (Juniorprofessur), Institute of Computer Science

Aarhus University, Denmark (2015–2017)

Post-doctoral researcher, Department of Computer Science

- Contact person: Associate Prof. Ira Assent

Humboldt-Universität zu Berlin, Germany (2013–2015)

Post-doctoral researcher, Department of Computer Science

- Contact person: Prof. Dr. Ulf Leser

The University of Hong Kong, Hong Kong SAR, China (2011–2013)

Post-doctoral researcher, Department of Computer Science

– Contact person: Prof. Nikos Mamoulis

National Technical University of Athens, Greece (2005–2011)

Doctorate researcher, School of Electrical and Computer Engineering

– Contact persons: Prof. Yannis Vassiliou and Prof. Timos Sellis

University of Athens, Greece (2005)

Research assistant, Department of Informatics and Telecommunications

– Contact person: Associate Prof. Aphrodite Tsalgaidou

PUBLICATIONS

Journal articles

- [J9] Fabian Fier, Nikolaus Augsten, Panagiotis Bouros, Ulf Leser and Johann-Christoph Freytag, *Set Similarity Joins on MapReduce: An Experimental Survey*, Proceedings of the VLDB Endowment, Vol 11, No 10, May 2018.
To be presented at the 44th International Conference on Very Large Data Bases (VLDB'18), Rio de Janeiro, Brazil, August 27-31, 2018.
- [J8] Panagiotis Bouros, Matthias Renz and Dimitris Sacharidis, *Localrec 2017 workshop report: the First ACM SIGSPATIAL Workshop on Recommendations for Location-Based Services and Social Networks: Redondo Beach, California, USA - November 7, 2017*, SIGSPATIAL Special, Vol 9, No 3, November 2017.
- [J7] Shuyao Qi, Dimitris Sacharidis, Panagiotis Bouros and Nikos Mamoulis, *Snap-shot and Continuous Points-based Trajectory Search*, International Journal on Advances of Computer Science for Geographic Information Systems (GeoInformatica), Vol 21, No 4, October 2017.
- [J6] Panagiotis Bouros and Nikos Mamoulis, *A Forward Scan based Plane Sweep Algorithm for Parallel Interval Joins*, Proceedings of the VLDB Endowment (PVLDB), Vol 10, No 11, July 2017
Presented at the 43rd International Conference on Very Large Data Bases (VLDB), Munich, Germany, August 28 - September 1, 2017.
- [J5] Panagiotis Bouros, Nikos Mamoulis, Shen Ge and Manolis Terrovitis, *Set Containment Join Revisited*, International Journal on Knowledge and Information Systems (KAIS), Vol 49, No 1, October, 2016.
- [J4] Willi Mann, Nikolaus Augsten and Panagiotis Bouros, *An Empirical Evaluation of Set Similarity Join Techniques*, Proceedings of the VLDB Endowment, Vol 9, No 9, May 2016.
Presented at the 42nd International Conference on Very Large Data Bases (VLDB), New Delhi, India, September 5-9, 2016.
- [J3] John Liagouris, Nikos Mamoulis, Panagiotis Bouros and Manolis Terrovitis, *An Effective Encoding Scheme for Spatial RDF Data*, Proceedings of the VLDB Endowment (PVLDB), Vol 7, No 12, August 2014.
Presented at the 40th International Conference on Very Large Data Bases (VLDB), Hangzhou, China, September 1-5, 2014.

- [J2] Panagiotis Bouros, Shen Ge and Nikos Mamoulis, *Spatio-Textual Similarity Joins*, Proceedings of the VLDB Endowment (PVLDB), Vol 6, No 1, November 2012. Presented at the 39th International Conference on Very Large Data Bases (VLDB), Riva del Garda, Trento, Italy, August 26-30, 2013.
- [J1] Panagiotis Bouros, Dimitris Sacharidis, Theodore Dalamagas, Spiros Skiadopoulos and Timos Sellis, *Evaluating Path Queries over Frequently Updated Route Collections*, IEEE Transactions on Knowledge and Data Engineering (TKDE), Vol 24, No 7, July 2012.

Refereed proceedings

- [P21] Theodoros Chondrogiannis, Panagiotis Bouros, Johann Gamper, Ulf Leser and David B. Blumenthal, *Finding k -Dissimilar Paths with Minimum Collective Length*, Proceedings of the 26th ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL), Seattle, Washington, USA, November 6-9, 2018. (poster)
- [P20] Panagiotis Bouros and Nikos Mamoulis, *Interval Count Semi-Joins*, Proceedings of the 21st International Conference on Extending Database Technology (EDBT), Vienna, Austria, March 26-29, 2018. (short paper)
- [P19] Dimitris Sacharidis, Panagiotis Bouros and Theodoros Chondrogiannis, *Most Preferred Path*, Proceedings of the 25th ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL), Redondo Beach, California, USA, November 7-10, 2017.
- [P18] Theodoros Chondrogiannis, Panagiotis Bouros, Johann Gamper and Ulf Leser, *Exact and Approximate Algorithms for Finding k -Shortest Paths with Limited Overlap*, Proceedings of the 20th International Conference on Extending Database Technology (EDBT), Venice, Italy, March 21-24, 2017.
- [P17] Anja Kunkel, Astrid Rheinländer, Christopher Schiefer, Sven Helmer, Panagiotis Bouros and Ulf Leser, *PIEJoin: Towards Parallel Set Containment Joins using Prefix Tree Indexes*, Proceedings of the 28th International Conference on Scientific and Statistical Database Management (SSDBM), Budapest, Hungary, July 18-20, 2016.
- [P16] Theodoros Chondrogiannis, Panagiotis Bouros, Johann Gamper and Ulf Leser, *Alternative Routing: k -Shortest Paths with Limited Overlap*, Proceedings of the 23rd ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL), Seattle, Washington, USA, November 3-6, 2015. (poster)
- [P15] Panagiotis Bouros, Neal Lathia, Matthias Renz, Francesco Ricci and Dimitris Sacharidis, *LocalRec'15: Workshop on Location-Aware Recommendations*, Proceedings of the 9th ACM Conference on Recommender Systems (RecSys), Vienna, Austria, September 16-20, 2015.
- [P14] Shuyao Qi, Panagiotis Bouros, Dimitris Sacharidis and Nikos Mamoulis, *Efficient Point-based Trajectory Search*, Proceedings of the 14th International Symposium on Spatial and Temporal Databases (SSTD), Hong Kong, China, August 26-28, 2015.
Received the **Best Paper Award**.
- [P13] Panagiotis Bouros, Dimitris Sacharidis and Nikos Bikakis, *Regionally Influential Users in Location-Aware Social Networks*, Proceedings of the 22nd ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL), Dallas, Texas, USA, November 4-7, 2014. (poster)

- [P12] Dimitris Sacharidis and Panagiotis Bouros, *Routing Directions: Keeping it Fast and Simple*, Proceedings of the 21st ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL GIS), Orlando, Florida, USA, November 5-8, 2013.
- [P11] Shuyao Qi, Panagiotis Bouros and Nikos Mamoulis, *Efficient Top-k Spatial Distance Joins*, Proceedings of the 13th International Symposium on Spatial and Temporal Databases (SSTD), Munich, Germany, August 21-23, 2013.
- [P10] Panagiotis Bouros, Dimitris Sacharidis, Theodore Dalamagas and Timos Sellis, *Dynamic Pickup and Delivery with Transfers*, Proceedings of the 12th International Symposium on Spatial and Temporal Databases (SSTD), Minneapolis, Minnesota, USA, August 24-26, 2011.
- [P9] Manolis Terrovitis, Panagiotis Bouros, Panos Vassiliadis, Timos Sellis and Nikos Mamoulis, *Efficient Answering of Set Containment Queries for Skewed Item Distributions*, Proceedings of the 14th International Conference on Extending Database Technology (EDBT), Uppsala, Sweden, March 21-25, 2011.
- [P8] Panagiotis Bouros and Yiannis Vassiliou, *Evaluating Path Queries over Route Collections*, Proceedings of the PhD Workshop in conjunction with the 26th IEEE International Conference on Data Engineering (ICDE), Long Beach, California, USA, March 5, 2010.
- [P7] Panagiotis Bouros, Spiros Skiadopoulos, Theodore Dalamagas, Dimitris Sacharidis and Timos Sellis, *Evaluating reachability queries over path collections*, Proceedings of the 21st International Conference on Scientific and Statistical Database Management (SSDBM), New Orleans, Louisiana, USA, June 2-4, 2009.
- [P6] Panagiotis Bouros, Theodore Dalamagas, Spiros Skiadopoulos and Timos Sellis, *Evaluating "Find a Path" Reachability Queries*, Proceedings of the Workshop on Spatial and Temporal Reasoning in conjunction with the 18th European Conference on Artificial Intelligence (ECAI), Patras, Greece, July 22, 2008.
- [P5] Dimitris Sacharidis, Panagiotis Bouros and Timos Sellis, *Caching Dynamic Skyline Queries*, Proceedings of the 20th International Conference on Scientific and Statistical Database Management (SSDBM), Hong Kong, China, July 9-11, 2008.
- [P4] Theodore Dalamagas, Panagiotis Bouros, Theodore Galanis, Magdalini Eirinaki and Timos Sellis, *Mining User Navigation Patterns for Personalizing Topic Directories*, Proceedings of the 9th ACM International Workshop on Web Information and Data Management (WIDM) in conjunction with the 16th ACM International Conference on Information and Knowledge Management (CIKM), Lisbon, Portugal, November 9, 2007.
- [P3] Panagiotis Bouros, Aggeliki Fotopoulou and Nicholas Glaros, *An interactive environment for creating and validating syntactic rules*, Proceedings of the 5th International Conference on Recent Advances in Natural Language Processing (RANLP), Borovets, Bulgaria, September 21-23, 2005. (poster)
- [P2] Aggeliki Koukoutsaki, Theodore Dalamagas, Timos Sellis and Panagiotis Bouros, *PatMan: A Visual Database System to Manipulate Path Patterns and Data in Hierarchical Catalogs*, Proceedings of the International Workshop of the EU Network of Excellence DELOS on Audio-Visual Content and Information Visualization in Digital Libraries (AVIVDiLib), Cortona, Italy, May 4-6, 2005.
- [P1] Panagiotis Bouros, Theodore Dalamagas, Timos Sellis and Manolis Terrovitis, *PatManQL: A language to manipulate patterns and data in hierarchical catalogs*,

Proceedings of the 1st International Workshop on Pattern Representation and Management (PaRMa) in conjunction with the 9th International Conference on Extending Database Technology (EDBT), Heraklion, Crete, Greece, March 18, 2004.

Technical Reports

- [TR6] *Continuous Monitoring of Regionally Influential Users in Location-Aware Social Networks*, journal extension to [P13] with Dimitris Sacharidis. (under preparation)
- [TR5] *Alternative Routing* with Theodoros Chondrogiannis, Johann Gamper, Ulf Leser and David B. Blumenthal. (under preparation)
- [TR4] *Outlier Detection for Decision-Making in Precision Agriculture* with Ira Assent, Jacob Høxbroe Jeppesen and Thomas Skjødeberg Toftegaard. (under preparation)
- [TR3] *Top-k Spatial Distance Joins* with Shuyao Qi and Nikos Mamoulis, submitted to GeoInformatica.
- [TR2] Shuyao Qi, Panagiotis Bouros and Nikos Mamoulis, *Efficient Top-k Joins on Complex Data Types*, TR-2015-03, Department of Computer Science, University of Hong Kong, Hong Kong SAR, China, March 2016.
<http://www.cs.hku.hk/research/techreps/document/TR-2015-03.pdf>
- [TR1] Panagiotis Bouros, *Semantic Web Services: A conceptual comparison of OWL-S, WSMO and METEOR-S approaches*, Department of Informatics and Telecommunications, University of Athens, Greece, 2005.
http://www.dblab.ece.ntua.gr/~pbour/docs/SWS_Conceptual_Comparison.pdf

ACADEMIC
EXPERIENCE

Johannes Gutenberg University Mainz, Germany

Course instructor

- Database Systems I / Information Systems I (Spring 2018)
- Database Systems Seminar (Fall 2018)
- Database Systems Lab (Practical Seminar) (Fall 2018)

(co-)Supervisor

- Alina Gerhards, *Equi-joins on GPU*, Master thesis (2018–now)

Aarhus University, Denmark

Course instructor

- Introduction to Databases (Q1, Fall 2015)

Teaching assistant

- Indexing of disk-based data (Q3, Spring 2017)
- Multidimensional Databases (Q3, Spring 2016)

Advisor

- Tobias Sommer, *Outlier detection on spatio-temporal data*, Graduate student project (2016)
- Jens C. B. Madsen & Benjamin Petersen, *Continuous Monitoring of Geosocially Influential Users*, Graduate student project (2016)

Free University of Bozen-Bolzano, Italy

Advisor

- Theodoros Chondrogiannis, *Efficient Algorithms for Route Planning Problems on Road Networks*, PhD thesis (2015–2017)

Humboldt-Universität zu Berlin, Germany

Advisor

- Fabian Fier, *Managing complex big data types*, PhD thesis (2013–now)
- Florian Hönicke, *Optimizing Set Similarity Joins on MapReduce*, Diploma thesis (2015)
- Anja Kunkel, *Set containment joins using two prefix trees*, Undergraduate student project (2014)

The University of Hong Kong, Hong Kong SAR, China

Advisor

- Shuyao Qi, *Advanced Ranking Queries on Composite Data*, PhD thesis (2012–2016)
- Shen Ge, *Advanced analysis and join queries in multidimensional spaces*, PhD thesis (2012)

National Technical University of Athens, Greece

Teaching assistant and lab instructor

- Database Systems (Fall 2006–2009)
- Computer Programming (Fall 2005)

Advisor

- John Liagouris, *Web Data Management with Applications in Privacy*, PhD student (2014)
- Dora Kontogianni, *GRAPHIT-DB: Graph Data Management System (II)*, Diploma thesis (2009)
- Vassilis Giannopoulos, *P-Miner+: Portal Catalogs Administration Supporting Usage Data Mining Processes*, Diploma thesis (2009)
- John Liagouris & Trifonas Farmakakis, *DataBase supported Reasoning System (DBRS)*, Diploma thesis (2008)
- Lemonnia Boula, *GRAPHIT-DB: Graph Data Management System (I)*, Diploma thesis (2007)
- Theodore Galanis, *P-Miner: Portal Catalogs Administration Supporting Usage Data Mining Processes*, Diploma thesis (2006)

University of Athens, Greece

Teaching assistant

- Software Engineering (Fall 2005)
- System Analysis (Spring 2005)

Invited

- “Athena” Research and Innovation Center, Athens, Greece, November 14, 2017
- Johannes Gutenberg Universität Mainz, Germany, April 8, 2017
- University of Southampton, UK, April 4, 2017
- Birkbeck, University of London, UK, March 13, 2017
- Leibniz Universität Hannover, Germany, September 8, 2016.
- Technische Universität Berlin (TUB), Germany, July 11, 2016
- University of Manchester, UK, May 25, 2016
- University of Oxford, UK, May 18, 2016
- University of South Denmark (SDU), Odense, Denmark, March 4, 2016
- Centrum Wiskunde & Informatica (CWI), Amsterdam, Netherlands, December 17, 2014
- *Spatio-Textual Similarity Joins*, Free University of Bozen-Bolzano (UNIBZ), Italy, October 24, 2013.
- *Routing on Road Networks beyond the Fastest Path*, Free University of Bozen-Bolzano (UNIBZ), Italy, October 23, 2013.

Venues

- *A Forward Scan based Plane Sweep Algorithm for Parallel Interval Joins*, 43rd International Conference on Very Large Data Bases (VLDB), Munich, Germany, August 31, 2017.
- *Spatio-Textual Similarity Joins*, 39th International Conference on Very Large Data Bases (VLDB), Riva del Garda, Trento, Italy, August 29, 2013.
- *Evaluating Path Queries over Route Collections*, 26th IEEE International Conference on Data Engineering (ICDE) PhD Workshop, Long Beach, CA, USA, March 5, 2010.
- *Evaluating Reachability Queries Over Path Collections*, 21st International Conference on Scientific and Statistical Database Management (SSDBM), New Orleans, LA, USA, June 2-4, 2009.
- *Evaluating “Find a Path” Reachability Queries*, Workshop on Spatial and Temporal Reasoning (STRWS) in conjunction with the 18th European Conference on Artificial Intelligence (ECAI), Patras, Greece, July 22, 2008.
- *Caching Dynamic Skyline Queries*, 20th International Conference on Scientific and Statistical Database Management (SSDBM), Hong Kong, China, July 9-11, 2008.
- *Mining User Navigation Patterns for Personalizing Topic Directories*, 9th ACM International Workshop on Web Information and Data Management (WIDM) in conjunction with the 16th ACM International Conference on Information and Knowledge Management (CIKM), Lisbon, Portugal, November 9, 2007.
- *An interactive environment for creating and validating syntactic rules*, 5th International Conference on Recent Advances in Natural Language Processing (RANLP), Borovets, Bulgaria, September 21-23, 2005.

- *PatManQL: A language to manipulate patterns and data in hierarchical catalogs*, International Workshop on Pattern Representation and Management (PaRMa) in conjunction with the 9th International Conference on Extending Database Technology (EDBT), Heraklion, Crete, Greece, March 18, 2004.

National events

- *A Forward Scan based Plane Sweep Algorithm for Parallel Interval Joins*, 16th Hellenic Data Management Symposium (HDMS'18), Larnaca, Cyprus, July 3, 2018.
- *An Effective Encoding Scheme for Spatial RDF Data*, 13th Hellenic Data Management Symposium (HDMS), Athens, July 30-31, 2015.
- *Spatio-Textual Similarity Joins*, 12th Hellenic Data Management Symposium (HDMS), Athens, Greece, July 24-25, 2014.
- *Dynamic Pickup and Delivery with Transfers*, 10th Hellenic Data Management Symposium (HDMS), Athens, Greece, June 17-18, 2011.
- *Efficient Answering of Set Containment Queries for Skewed Item Distributions*, 10th Hellenic Data Management Symposium (HDMS), Athens, Greece, June 17-18, 2011.
- *Evaluating reachability queries over path collections*, 8th Hellenic Data Management Symposium (HDMS), Athens, Greece, August 31-September 1, 2009.
- *Caching Dynamic Skyline Queries*, 7th Hellenic Data Management Symposium (HDMS), Heraklion, Greece, July 28-29, 2008.

SERVICE

Member of Program Committee

- VLDB, EDBT, SIGSPATIAL, SISAP (2018)
- SIGSPATIAL, BigDataService, Smart City BigData@BigDataService (2017)
- ICDE, CIKM, SIGSPATIAL, BigDataService, SISAP, GeoRich@SIGMOD (2016)
- CIKM, SIGSPATIAL, DASFAA, BigDataService, SISAP, GeoRich@SIGMOD (2015)
- CIKM, SIGSPATIAL, ICDM Demos, SISAP, iiWAS, BASNA, GeoRich@SIGMOD (2014)
- CIKM Posters (2011)

Journal Reviewer

- VLDBJ, TODS, TKDE, DKE, IS, WWWJ, JCST, TJSS

External Reviewer

- SIGMOD, VLDB (2017)
- VLDB, SIGKDD (2016)
- SIGMOD, ICDE, EDBT (2015)
- SIGMOD, SIGKDD (2014)
- SIGMOD, ICDE, SIGKDD, SSTO, DASFAA (2013)

- DASFAA (2012)
- SIGMOD, CIKM, SSTD, TPD (2011)
- ICDE, SETN, DEXA, EGOVIS (2010)
- VLDB, EDBT, CIKM, BPM (2009)
- Journal of IR (2008)
- PCI, PersDL (2007)
- PSI, DaWak, HDMS (2006)
- DEXA, EC-Web, I3E, ICWS (2005)

Member of Organizing Committee

- LocalRec@SIGSPATIAL (2018)
- GeoRich@SIGMOD, LocalRec@SIGSPATIAL, GeoTour@ADBIS (2017)
- GeoRich@SIGMOD (2016)
- LocalRec@RecSys, GeoRich@SIGMOD (2015)
- GeoRich@SIGMOD (2014)

DISTINCTIONS

- Best paper award, International Symposium on Spatial and Temporal Databases (SSTD) (2015)
- **Greek State Scholarships Foundation (IKY)** (2007–2010)

APPLICATIONS FOR FUNDING

- *Next Generation Route Planning*, Council for Independent Research, Denmark
- *Next Generation Route Planning*, Carlsberg Foundation, Denmark
- *Spatio-Textual Data Management*, Alexander von Humboldt Foundation, Germany

ACADEMIC PROJECTS

Aarhus University, Denmark

Future Cropping (2016–2017)

– Funded by Innovation Fund Denmark, J. nr. 5107-00002B

Humboldt-Universität zu Berlin, Germany

METRIK: Model-Based Development of Technologies for Self-Organizing Decentralized Information Systems in Disaster Management (2013–2015)

– Funded by the German Research Foundation (DFG), grant no GRK 1324

The University of Hong Kong, Hong Kong SAR, China

Spatio-Textual Joins (2011–2013)

– Funded by the Research Grants Council (RGC) of Hong Kong, HKU 714212E

National Technical University of Athens, Greece

Tree-structured Data Source Integration on the Semantic Web (2007)

- Scientific and technological cooperation between RTD organizations in Greece, USA, Canada, Australia, New Zealand, Japan, Korea, Taiwan, Malaysia and Singapore

University of Athens, Greece

DL.org: Coordination action on digital library interoperability, best practices and modeling foundations (2009)

- Funded by the European Union

DILIGENT: A Testbed Digital Library Infrastructure on Grid Enabled Technology (2007)

- Funded by the European Union

SODIUM: Service Oriented Development In a Unified Environment (2005)

- Funded by the European Union

INTEROP: Interoperability research and networked enterprises applications and software (2005)

- Funded by the European Union

Athens University of Economics and Business, Greece

Web data mining and management based on the Peer-to-Peer (P2P) networks paradigm (2007–2008)

- Funded by the Greek Ministry of Development

SQO-OSS: Source Quality Observatory for Open Source Software (2006–2008)

- Funded by the European Union

EXPERIENCE IN
INDUSTRY

Biovista Knowledge Management for the Life Sciences, Greece

Software and database engineer (2006)

- Performance enhancement of BEA search engine core
- MySQL server tuning, database and query analysis and optimization
- Implementing inverted file on top of Berkeley DB

Institute for Language and Speech Processing (ILSP), Greece

Software engineer - Department of Electronic Lexicography (2001–2005)

- Symfonia, advanced spelling checker
- Rules for syntactic analysis of human text
- Environment for creating and validating syntactic rules of Symfonia

iLang Language Innovation, Greece

Software engineer

(2004–2005)

– Development of an electronic edition for a thesaurus

SPOKEN
LANGUAGES

- Greek (Native speaker)
- English (Cambridge Proficiency)
- French (DELF 1st degree)