

CURRICULUM VITAE

Dr. Panagiotis Bouros
(January 18, 2024)

CONTACT INFORMATION

Institute of Computer Science
Johannes Gutenberg University Mainz
Room 03-121
Staudingerweg 9
55128 Mainz, Germany

Telephone: +49 (0) 6131 39 23603
E-mail: bouros@uni-mainz.de
Homepage: <https://pbour.github.io>
ORCID: 0000-0002-8846-4330
Google scholar: <https://scholar.google.com/citations?hl=en&user=TezsWQUAAAAJ>

EDUCATION

National Technical University of Athens, Greece

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

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

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

- Thesis title: *Query Language for Hierarchical Structures*
- Supervisor: Prof. Timos Sellis

RESEARCH INTERESTS

- Scalable data management
- In-memory databases and modern hardware
- Indexing and 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 prof., Institute of Computer Science

Aarhus University, Denmark (2015–2017)

Post-doctoral researcher, Department of Computer Science

- Contact person: 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 Tsalgatidou

ACADEMIC
EXPERIENCE/
COLLABORATIONS

Johannes Gutenberg University Mainz, Germany

Instructor

- Database Systems (Summer 2023, 2022, 2021, 2020, 2019, 2018)
- Database Systems II / Non-Standard Database Systems (Winter 2023/24, 2022/23, 2021/22, 2020/21, 2019/20)
- Non-Standard Database Systems Seminar (Summer 2023, 2022, 2021, 2020)
- Database Systems Lab (Praktikum) (Summer 2023, 2022, 2021, Winter 2020/21, 2019/20, 2018/19)
- Database Systems Seminar (Winter 2018/19)

Supervisor

- Christian Rauch, *Temporal Information Retrieval*, Doctorate thesis (running)
- Samia Mubarika Goraya, *NLP and Systems Neuroscience Data* (working title), Master thesis (running)
- Tobias Laures, *Analysis of Academic Social Networks: Case Studies on the Impacts of COVID-19 and the Ukraine War*, Master thesis (running)
- Julius Hoffmann, *A Graphical Interface for Managing Geosocial networks*, Bachelor thesis (running)
- Patrick Götz, *A graphical user interface for systems neuroscience data*, Bachelor thesis (running)
- Jan Raider, *A Graphical User Interface for Managing Interval Data*, Bachelor thesis (running)
- Yazhou Pan, *Processing spatial keyword search queries*, Bachelor thesis (2023)
- Lina Khidair, *An interactive graphical user interface for systems neuroscience graph data*, Bachelor thesis (2023)
- Huu Duy Nguyen, *Path Diversification for Evacuation Planning*, Bachelor thesis (2023)
- Abed Al Rahman Sansour, *A Graphical User Interface for generating Geosocial networks*, Bachelor thesis (2023)
- Maximilian Zerbe, *Spatio-textual Outlier Detection*, Bachelor thesis (2023)
- Arjanit Arifi, *Training ETA models with recovered routes*, Bachelor thesis (2023)

- Adrian Kissinger, *Geospatial data on maps for routing applications*, Bachelor thesis (2023)
- David Betz, *Extending the EURASIM Interface for Evacuation Planning in Urban Areas*, Bachelor thesis (2023)
- Mubarika Samia Goraya, *Generating complex and composite data*, Bachelor thesis (2022)
- Claudia Berenice Perez Martinez, *An interactive graphical interface for generating road networks*, Bachelor thesis (2022)
- Yannic Marcel Moog, *Extending k-Shortest Paths with Limited Overlap*, Bachelor thesis (2021)
- Daniel-Valentin Kowalski, *Evaluating GeoSocial Reachability Queries*, Bachelor thesis (2021)
- Christian Häcker, *k Most Diverse Near-Shortest Paths*, Bachelor thesis (2021)
- Artur Titkov, *Spatially Combined Text Searches*, Bachelor thesis (2020)
- Mohamed Masarwa, *Monitoring Geo-Social Influence in Location-Aware Social Networks*, Bachelor thesis (2019)
- Matthias Sawatzky, *A Web Application for Analysis and Comparison of k-Shortest Paths with Limited Overlap Algorithms on Road Networks*, Bachelor thesis (2019)

co-Supervisor

- Lisa-Particia Barth, *App-Based Specification and Visualization of User Preferences in Routing*, Master thesis (2022)
- Marc Araujo Conde, *A Database with Amnesia*, Bachelor thesis (2021)
- Alina Gerhards, *Equi-joins on GPU*, Master thesis (2019)

University of Ioannina, Greece

Advisor or co-Supervisor

- Achilleas Michalopoulos, *Scalable Spatial Query Evaluation*, Doctorate thesis (running)
- Dimitrios Tsitsigkos, *Join Operators for Complex Data*, Doctorate thesis (running)
- Giorgos Kotsinas, *Querying intervals* (working title). Master thesis (running)
- George Christodoulou, *Managing Big and Complex Data in Main Memory*, Doctorate thesis (2023)

University of Konstanz, Germany

co-Supervisor

- Timo Suk, *Route Inference as a Tool for Generating Training Data for ML-based tasks*, Master thesis (running)
- Nina Röckelein, *Measuring the Attractiveness of Transportation Modes using Relative Reachability and Mobility Patterns*, Bachelor thesis (2023)
- Judith Kunz, *Finding Similarity Through Dissimilarity: Utilizing path dissimilarity for role extraction in networks*, Master thesis (2022)

Aarhus University, Denmark

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 Geo-Socially Influential Users*, Graduate student project (2016)

Free University of Bozen-Bolzano, Italy**Advisor**

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

Humboldt-Universität zu Berlin, Germany**Advisor**

- 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*, Doctorate thesis (2012–2016)
- Shen Ge, *Advanced analysis and join queries in multidimensional spaces*, Doctorate thesis (2012)

National Technical University of Athens, Greece**Teaching assistant and lab instructor**

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

Advisor

- John Liagouris, *Web Data Management with Applications in Privacy*, Doctorate thesis (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)
- Lemonia 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)

TALKS/EVENTS

Invited

- Technische Universität Wien (TUW), Austria, September 19, 2023
- Technische Universität Berlin (TUB), Germany, May 8, 2023
- Freie Universität Berlin, Germany, July 20, 2022
- Hasso Plattner Institute, University of Potsdam, Germany, June 23, 2022
- University of Manchester, UK, March 14, 2022
- Friedrich-Schiller-Universität Jena, Germany, May 21, 2021
- Université Libre de Bruxelles, Belgium, April 28, 2021
- Ionian University, Greece, February 16, 2021
- University of Vienna, Austria, December 11, 2020
- University of Ioannina, Greece, November 2, 2020
- University of Regensburg, Germany, October 8, 2020
- University of Bonn, Germany, January 10, 2020
- IT University of Copenhagen, Denmark, September 24-25, 2019
- Vrije Universiteit Brussel, Belgium, June 6, 2019
- “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
- Free University of Bozen-Bolzano (UNIBZ), Italy, October 23 & 24, 2013

Venues

- *Towards Generating Realistic Geosocial Networks*, 7th ACM SIGSPATIAL International Workshop on Location-Based Recommendations, Geosocial Networks, and Geoadvertising (LocalRec), in conjunction with the 31st ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL), Hamburg, Germany, November 13, 2023.
- *Most Diverse Near-Shortest Paths*, 29th ACM International Conference on Advances in Geographic Information Systems (ACM SIGSPATIAL), Beijing, China, November 4, 2021.
- *Band Joins for Interval Data*, 23rd International Conference on Extending Database Technology (EDBT), Copenhagen, Denmark, April 1, 2020.
- *Processing Satellite Imagery for Decision-Making in Precision Agriculture*, 2nd International Workshop on Big Data Visual Exploration and Analytics (BigVis) in conjunction with the 22nd International Conference on Extending Database Technology (EDBT), Lisbon, Portugal, March 26, 2019.
- *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 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), 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

- EDBT (2025)
- VLDB DASFAA, EDBT PhD (2024)
- VLDB, SIGSPATIAL, DASFAA, SSTD, SISAP (2023)
- ICDE, SIGSPATIAL, DASFAA, SISAP (2022)
- ICDE, SIGSPATIAL, SSTD, DASFAA, SISAP, TIME (2021)
- ICDE, SIGMOD demos, SIGSPATIAL, CIKM short papers, SISAP, TIME (2020)
- SIGSPATIAL, SISAP (2019)
- 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 ($\times 7$), TODS, TKDE ($\times 5$), GeoInformatica (\times), DKE, IS ($\times 2$), WWWJ, TSAS ($\times 4$), DAPD ($\times 2$), JCST, TJSS

External Reviewer

- SIGMOD, VLDB (2017)
- VLDB, SIGKDD (2016)
- SIGMOD, ICDE, EDBT (2015)
- SIGMOD, SIGKDD (2014)
- SIGMOD, ICDE, SIGKDD, SSTD, 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

- SIGSPATIAL, LocalRec@SIGSPATIAL (2023)
- SIGSPATIAL, LocalRec@SIGSPATIAL (2022)
- LocalRec@SIGSPATIAL (2021)
- GeoRich@SIGMOD, LocalRec@SIGSPATIAL (2020)
- SSTD, LocalRec@SIGSPATIAL (2019)
- 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	<ul style="list-style-type: none"> • <i>KINet: Artificial intelligence-based mission support with sensor safety net and sensor data analysis</i> German Federal Ministry of Education and Research (BMBF) call on “Artificial Intelligence in Civil Security Research II” • <i>Next Generation Route Planning</i> Council for Independent Research, Denmark • <i>Next Generation Route Planning</i> Carlsberg Foundation, Denmark • <i>Spatio-Textual Data Management</i> Alexander von Humboldt Foundation, Germany
ACADEMIC PROJECTS	<p>Johannes Gutenberg University Mainz, Germany</p> <p><i>Big Data: In-Memory Databases and Data Analytics</i> (2018–2022)</p> <p>Junior professorship</p> <ul style="list-style-type: none"> – Funded by the Carl-Zeiss Foundation <p>Johannes Gutenberg University Mainz, Germany</p> <p><i>Big Data: In-Memory Databases and Data Analytics</i> (2018–2022)</p> <ul style="list-style-type: none"> – Funded by the Carl-Zeiss Foundation <p>Aarhus University, Denmark</p> <p><i>Future Cropping</i> (2016–2017)</p> <ul style="list-style-type: none"> – Funded by the Innovation Fund Denmark, J. nr. 5107-00002B <p>Humboldt-Universität zu Berlin, Germany</p> <p><i>METRIK: Model-Based Development of Technologies for Self-Organizing Decentralized Information Systems in Disaster Management</i> (2013–2015)</p> <ul style="list-style-type: none"> – Funded by the German Research Foundation (DFG), grant no GRK 1324 <p>The University of Hong Kong, Hong Kong SAR, China</p> <p><i>Spatio-Textual Joins</i> (2011–2013)</p> <ul style="list-style-type: none"> – Funded by the Research Grants Council (RGC) of Hong Kong, HKU 714212E <p>National Technical University of Athens, Greece</p> <p><i>Tree-structured Data Source Integration on the Semantic Web</i> (2007)</p> <ul style="list-style-type: none"> – 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