

Constantinos Costa

(Curriculum Vitae)

Last Update: August 2, 2019

Department of Computer Science
University of Pittsburgh
6135 Sennott Square., 210 South Bouquet Street,
Pittsburgh, PA 15260, USA
Advanced Data Management Technologies Laboratory (ADMT)

Tel: +1 412-624-8490
Fax: +1 412-624-5249
costa.c@cs.pitt.edu
<http://www.cs.ucy.ac.cy/~costa.c/>
<http://db.cs.pitt.edu/>

I. RESEARCH INTERESTS

Data Management and Mobile Computing, particularly distributed query processing for spatial and spatio-temporal datasets.

II. EDUCATION

- Ph.D.** Computer Science, University of Cyprus 2013-2018
Thesis: Algorithms and Indexing Structures for Spatial Big Data
- M.Sc.** Computer Science, University of Cyprus 2011-2013
Thesis: Scalable Continuous All k Nearest Neighbors Queries
- B.Sc.** Computer Science, University of Cyprus 2007-2011
Thesis: SmartTrace: A Distributed Spatio-Temporal Similarity Search Framework using Android-based Smartphone

III. ACADEMIC APPOINTMENTS

- Visiting Lecturer**, Dept. of Computer Science, University of Pittsburgh, USA 01/2019-current
- Research Associate**, ADMT Lab, University of Pittsburgh, USA 2019-current
- Visiting Lecturer**, Dept. of Computer Science, University of Cyprus, Cyprus 09/2018-01/2019
- Research Assistant**, DMSL Lab, University of Cyprus, Cyprus 2010-2018
- Teaching Assistant**, University of Cyprus, Cyprus 2011-2018
- Academic Collaborator**, University of Cyprus, Nicosia, Cyprus 2009-2013

IV. PUBLICATIONS

Google Scholar Citations: 151; h-index¹: 7; i10-index²: 7

¹h-index is the largest number h such that h publications have at least h citations.

²i10-index is the number of publications with at least 10 citations.

JOURNAL AND MAGAZINE PAPERS

- J4. “Continuous Decaying of Telco Big Data with Data Postdiction”**,
Constantinos Costa, Andreas Charalampous, Andreas Konstantinidis, Demetrios Zeinalipour-Yazti, Mohamed F. Mokbel, *International Journal on Advances of Computer Science for Geographic Information Systems (GeoInformatica ’19)*, pp. 25 pages, **2019**.
- J3. “Crowdsourcing Emergency Data in Non-Operational Cellular Networks”**,
Georgios Chatzimilioudis, Constantinos Costa, Demetrios Zeinalipour-Yazti, Wang-Chien Lee, *Information Systems (InfoSys)*, Special Issue on Large-Scale Data Management for Mobile Applications, Vol. 64, pp. 292 - 302, Oxford, UK, **2017**.
- J2. “Distributed In-Memory Processing of All k Nearest Neighbor Queries”**,
Georgios Chatzimilioudis, Constantinos Costa, Demetrios Zeinalipour-Yazti and Wang-Chien Lee and Evaggelia Pitoura, *Transactions on Knowledge and Data Engineering (TKDE)*, IEEE Computer Society, Volume 28, Issue 4, Pages: 925-938, Los Alamitos, CA, USA, **2016**.
- J1. “Crowdsourced trace similarity with smartphones”**,
Demetrios Zeinalipour-Yazti, Christos Laoudias, Constantinos Costa, Michalis Vlachos, Dimitrios Gunopulos, *IEEE Transactions on Knowledge and Data Engineering (TKDE)*, IEEE Computer Society, Volume 25, Pages: 1240-1253, Los Alamitos, CA, USA, **2013**.

CONFERENCE AND WORKSHOP PAPERS

- C15. “CAPRIO: Graph-based Integration of Indoor and Outdoor Data for Path Discovery”**,
Constantinos Costa, Xiaoyu Ge, and Panos K. Chrysanthis, *Proceedings of the VLDB Endowment (PVLDB)*, Los Angeles, California, August 26 - August 30, **2019**. (In press)
- C14. “CAPRIO: Context Aware Path Recommendation exploiting Indoor and Outdoor information”**,
Constantinos Costa, Xiaoyu Ge, and Panos K. Chrysanthis, *Proceedings of the 1st IEEE Intl. Workshop on Algorithms for Indoor Architectures and Systems, (ALIAS 2019)*, 6 pages, June 10, 2019, Hong Kong, **2019**. (In press)
- C13. “Decaying Telco Big Data with Data Postdiction”**,
Constantinos Costa, Andreas Charalampous, Andreas Konstantinidis, Demetrios Zeinalipour-Yazti, and Mohamed F. Mokbel, *Proceedings of the 19th IEEE International Conference on Mobile Data Management, (MDM 2018)*, 10 pages, June 25 - June 28, 2018, AAU, Aalborg, Denmark, **2018**.
- C12. “Telco Big Data: Current State & Future Directions”**,
Constantinos Costa and Demetrios Zeinalipour-Yazti, *Proceedings of the 19th IEEE International Conference on Mobile Data Management, (MDM 2018)*, 4 pages, June 25 - June 28, 2018, AAU, Aalborg, Denmark, **2018**.
- C11. “FMS: Managing Crowdsourced Indoor Signals with the Fingerprint Management Studio”**,
Marileni Angelidou, Constantinos Costa, Artyom Nikitin and Demetrios Zeinalipour-Yazti, *Proceedings of the 19th IEEE International Conference on Mobile Data Management, (MDM 2018)*, 2 pages, June 25 - June 28, 2018, AAU, Aalborg, Denmark, **2018**.
- C10. “TBD-DP: Telco Big Data Visual Analytics with Data Postdiction”**,
Constantinos Costa, Andreas Charalampous, Andreas Konstantinidis, Demetrios Zeinalipour-Yazti, and Mohamed F. Mokbel *Proceedings of the 19th IEEE International Conference on Mobile Data Management, (MDM 2018)*, 2 pages, June 25 - June 28, 2018, AAU, Aalborg, Denmark, **2018**.

- C9. “Towards Real-Time Road Traffic Analytics using Telco Big Data”**,
Constantinos Costa, Georgios Chatzimilioudis, Demetrios Zeinalipour-Yazti and Mohamed F. Mokbel, *Proceedings of the 11th Intl. Workshop on Real-Time Business Intelligence and Analytics (BIRTE 2017)*, collocated with VLDB 2017, pp. 5:1–5:5, ISBN: 978-1-4503-5425-7/17/08, Munich, Germany, August 28, **2017**.
- C8. “Efficient Exploration of Telco Big Data with Compression and Decaying”**,
Constantinos Costa, Georgios Chatzimilioudis, Demetrios Zeinalipour-Yazti, Mohamed F. Mokbel, *Proceedings of the 33rd International Conference on Data Engineering (ICDE 2017)*, 12 pages, IEEE Press, San Diego, CA, USA, April 19-22 **2017**.
- C7. “SPATE: Decaying and Exploration of Telco Big Data”**,
Constantinos Costa, Georgios Chatzimilioudis, Demetrios Zeinalipour-Yazti, Mohamed F. Mokbel, Demo at *Proceedings of the 33rd International Conference on Data Engineering (ICDE 2017)*, 2 pages, IEEE Press, San Diego, CA, USA, April 19-22 **2017**.
- C6. “Distributed In-Memory Processing of All k Nearest Neighbor Queries (Extended Abstract)”**,
Georgios Chatzimilioudis, **Constantinos Costa**, Demetrios Zeinalipour-Yazti and Wang-Chien Lee and Evaggelia Pitoura, *Proceedings of the 32nd International Conference on Data Engineering (ICDE 2016)*, Helsinki, Finland, May 16-20, Pages: x, **2016**.
- C5. “Rayzit: An Anonymous and Dynamic Crowd Messaging Architecture”**,
Constantinos Costa, Chrysovalantis Anastasiou, Georgios Chatzimilioudis and Demetrios Zeinalipour-Yazti *Proceedings of the 3rd IEEE International Workshop on Mobile Data Management Mining and Computing on Social Networks collocated with IEEE MDM '15 (Mobi-social 2015)*, Pittsburgh, PA, USA, July 15-18, 978-1-4799-9972-9/15, IEEE Press, Volume 2, pp. 98-103, **2015**.
- C4. “Managing Smartphone Testbeds with SmartLab”**,
George Larkou, **Constantinos Costa**, Panayiotis K. Andreou, Andreas Konstantinides and Demetrios Zeinalipour-Yazti *Proceedings of the 27th USENIX Large Installation System Administration Conference (LISA 2013)*, Pages: 115-132, ISBN: 978-1-931971-05-8, Washington D.C., USA, **2013**.
- C3. “Demo: A Programming Cloud of Smartphones”**,
Andreas Konstantinidis, **Constantinos Costa**, George Larkou and Demetrios Zeinalipour-Yazti, *The 10th International Conference on Mobile Systems, Applications and Services (MobiSys 2012)*, Low Wood Bay, Lake District UK, June 25 - 29, Pages: 465-466, ISBN: 978-1-4503-1301-8, **2012**.
- C2. An Indoor Trajectory Comparison Framework for Android Smartphones**, Christos Laoudias, **Constantinos Costa**, Demetrios Zeinalipour-Yazti, Christos G. Panayiotou, Demo at the International Conference on Indoor Positioning and Indoor Navigation (**IPIN 2011**), Guimares, Portugal, 21-23 Sept. **2011**.
- C1. “SmartTrace: Finding Similar Trajectories in Smartphone Networks without Disclosing the Traces”**, **Constantinos Costa**, Christos Laoudias, Demetrios Zeinalipour-Yazti, Dimitrios Gunopulos Demo at 27th International Conference on Data Engineering March (**ICDE 2011**), ISBN 978-1-4244-8958-9, pp. 1288-1291, IEEE Press, April 11-16, Hannover, Germany, **2011**, [Acceptance Rate: 31% (21/67)].

BOOK CHAPTERS

- B1. “1 - Challenges of Fingerprinting in Indoor Positioning and Navigation”**,
Antoni Prez-Navarro and Joaquin Torres-Sospedra and Raul Montoliu and Jordi Conesa and Rafael Berkvens and Giuseppe Caso and **Constantinos Costa** and Nicola Dorigatti and Noelia Hernandez and Stefan Knauth and Elena Simona Lohan and Juraj Machaj and Adriano

Moreira and Pawel Wilk, **Geographical and Fingerprinting Data to Create Systems for Indoor Positioning and Indoor/Outdoor Navigation**, A volume in Intelligent Data-Centric Systems, Academic Press, Pages: 1 - 20, ISBN: 978-0-12-813189-3, **2019**.

THESES

- T3.** “**Algorithms and Indexing Structures for Spatial Big Data**”,
Costantinos Costa, Ph.D. Thesis, *Dept. of Computer Science, University of Cyprus*, July **2018**.
- T2.** “**Scalable Continuous All k Nearest Neighbors Queries**”,
Costantinos Costa, M.Sc. Thesis, *Dept. of Computer Science, University of Cyprus*, August **2013**.
- T1.** “**SmartTrace: A Distributed Spatio-Temporal Similarity Search Framework using Android-based Smartphones**”,
Costantinos Costa, B.Sc. Thesis, *Dept. of Computer Science, University of Cyprus*, June **2011**.

GREEK CONFERENCES

- G4.** “**Distributed In-Memory Processing of All k Nearest Neighbor Queries**”,
Georgios Chatzimilioudis, Constantinos Costa, Demetrios Zeinalipour-Yazti and Wang-Chien Lee and Evaggelia Pitoura, *The 14th Hellenic Data Management Symposium (HDMS 2016)*, Athens, Greece, July 28-29, **2016**. (unofficial proceedings)
- G3.** “**SmartTrace: Finding Similar Trajectories in Smartphone Networks without Disclosing the Traces**”,
Constandinos Costa, Christos Laoudias, Demetrios Zeinalipour-Yazti, Dimitrios Gunopulos Demo at *The 10th Hellenic Data Management Symposium (HDMS 2011)*, Athens, Greece, June 17-18, **2011** (unofficial proceedings).
- G1.** “**A Distributed Spatio-Temporal Similarity Search Framework using Android-based Smartphones (demo)**”,
Constandinos Costa, Constandinos Christoforou, George Nicolaidis, Diomidis Papadiomidous, Christos Laoudias, Demetrios Zeinalipour-Yazti *The 9th Hellenic Data Management Symposium (HDMS 2010)*, Ayia Napa, Cyprus, June 30 - July 3, **2010** (unofficial proceedings).

PRESENTATIONS

- **Presentation**, “*Towards Real-Time Road Traffic Analytics using Telco Big Data*”, The 11th Intl. Workshop on Real-Time Business Intelligence and Analytics, collocated with VLDB 2017 (BIRTE '17), Munich, Germany, August 28, **2017**.
- **Demo Presentation**, “*SPATE: Compacting and Exploring Telco Big Data*”, The 33rd IEEE International Conference on Data Engineering (ICDE 2017), San Diego, CA, USA, April 19, **2017**.
- **Presentation**, “*Efficient Exploration of Telco Big Data with Compression and Decaying*”, The 33rd IEEE International Conference on Data Engineering (ICDE 2017), San Diego, CA, USA, April 19, **2017**.
- **Presentation**, “*Anyplace Indoor Information Service*”, Symposium on Challenges of Fingerprinting in Indoor Positioning and Navigation, Open University of Catalonia, Barcelona, Spain, May 3, **2016**.

- **Presentation**, “*Managing Smartphone Testbeds with SmartLab*”, 27th USENIX Large Installation System Administration Conference ’ (LISA ’13), Washington D.C., USA, November 7, **2013**.
- **Presentation**, “*Trajectory Similarity with SmartTrace*”, Final Conference of MOVE COST Action IC903, Vienna, Austria, Sept 30 - Oct 1, 2013, October 1, **2013**.
- **Presentation**, “*Data Management in Smartphone Networks (for High School Students)*”, 2nd Computer Science Day for High School Students, University of Cyprus, Nicosia, Cyprus, March 19, **2011**.

V. RESEARCH AND DEVELOPMENT PROJECTS

- **2017 (PI): New Researcher Program**, University of Cyprus, Ph.D. Fellowship for C. Costa, Advisor: Demetrios Zeinalipour-Yazti.
- **2016 (PI): New Researcher Program**, University of Cyprus, Ph.D. Fellowship for C. Costa, Advisor: Demetrios Zeinalipour-Yazti.
- **06/2015-06/2016 (Research Assistant)**: ”Big Data Processing in Telecommunication Datacenters”, MTN Cyprus Ltd., Cyprus.
- **2014 (Young Researcher)**: ”New Researcher Program”, University of Cyprus, PhD Fellowship for C. Costa, Advisor: Demetrios Zeinalipour-Yazti.
- **01/2014-12/2014 (Research Assistant)**: ”Spatio-Temporal Mobile Data Management”, Geomatic Technologies Ltd., Cyprus.
- **11/2012-12/2013 (Research Assistant)**: “AppCampus Award: Rayzit”, Industrial Grant by Aalto University, Microsoft, Nokia.

VI. DEPARTMENTAL SERVICE

- **Evaluator/ Organizer**, 6th National Logipaigion Contest for Elementary and High School Students,

VII. PROFESSIONAL ACTIVITY & MEMBERSHIPS

- **Organizing Committee Member:**
 - **Vice Program Chair** Self-managing Database Systems (SMDB 2019), April 8, 2019 - Macau, **2019**.
 - **Webmaster** Data Management Day, DMD’19, June 19, 2019 - Nicosia, Cyprus, **2019**.
 - **Webmaster** 16th Hellenic Data Management Symposium (HDMS 2018), July 2-4, 2018 - Larnaca, Cyprus, **2018**.
 - **Webmaster** 3rd International Workshop On Human Mobility Computing and Privacy (HuMoComP 2015), held in conjunction with the 16th IEEE MDM 2015, June 18, 2015 - Pittsburgh, PA, USA, **2015**.
- **External Referee for Conferences/Symposiums:**
 - EDBT/ICDT - Intl. Conference on Extending Database Technology, 2019.
 - CIKM - Intl. Conference on Extending Database Technology, 2018.
 - IEEE MDM - Intl. Conference on Mobile Data Management, 2018.
 - EDBT/ICDT - Intl. Conference on Extending Database Technology, 2018.

- IEEE TMC - Transactions on Mobile Computing, 2017.
- IEEE MDM - Intl. Conference on Mobile Data Management, 2017.
- EDBT/ICDT - Intl. Conference on Extending Database Technology, 2017.
- VLDB - Very Large Data Bases Conference, 2016.
- EDBT/ICDT - Intl. Conference on Extending Database Technology, 2016.
- IEEE ICDE - Intl. Conference on Data Engineering, 2016.
- ACM SIGMOD - Intl. Management of Data Conference, 2015.
- IEEE MDM - Intl. Conference on Mobile Data Management, 2015.
- VLDB - Very Large Data Bases Conference, 2014
- ECML PKDD - European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, 2014.
- EDBT/ICDT - Intl. Conference on Extending Database Technology, 2014.
- ACM DEBS - Intl. Conference on Distributed Event-Based Systems, 2014.
- IEEE TSC - Transactions on Services Computing, 2014.
- ACM SIGMOD - Intl. Management of Data Conference, 2014.
- IEEE ISSNIP - Ninth Intl. Conference on Intelligent Sensors, Sensor Networks and Information Processing, 2014.
- IEEE ICDE - Intl. Conference on Data Engineering, 2013.
- SSDBM - Intl. Conference on Scientific and Statistical Database Management, 2013.
- VLDB - Very Large Data Bases Conference, 2013.

- **Referee for Journals and Magazines:**

- IJCIS - International Journal of Cooperative Information Systems, 2019.
- FGCS - InFuture Generation Computer Systems Journal, 2018.

- **External Referee for Workshops:**

- BigMine - Intl. Workshop on Big Data, IoT Streams and Heterogeneous Source Mining, 2019.
- ALIAS - Intl. Workshop on ALgorithms for Indoor Architectures and Systems, 2019.
- IEEE MobiSocial (MDM) - Intl. Workshop on Mobile Data Management, Mining, and Computing on Social Networks, 2015.

VIII. TEACHING WORK EXPERIENCE

TEACHING APPOINTMENTS

Visiting Lecturer, Dept. of Computer Sc., University of Pittsburgh 2019-current

- **CS1555 - Database Management Systems**, (Summer 2019)
<http://db.cs.pitt.edu/courses/cs1555/19-3/>
- **CS1555 - Database Management Systems**, (Spring 2019)
<http://db.cs.pitt.edu/courses/cs1555/19-2/>
- **CS0008 - Introduction to Computer Programming with Python**, (Spring 2019)
<http://db.cs.pitt.edu/courses/cs0008/19-2/>

Visiting Lecturer, Dept. of Computer Sc., University of Cyprus 2018

- **EPL035 - Data Structures and Algorithms for Elec. and Comp. Engineers**, (Fall 2018)
<https://www.cs.ucy.ac.cy/costa.c/courses/EPL035/>

Teaching Assistant, Dept. of Computer Sc., University of Cyprus

2011-2018

- **EPL660 - Information Retrieval and Search Engines**, taught by Prof. George Pallis
<http://www.cs.ucy.ac.cy/courses/EPL660/>
- **EPL646: Advanced Topics in Databases**, taught by Prof. Demetris Zeinalipour
<https://www.cs.ucy.ac.cy/~dzeina/courses/epl646/>
- **EPL342 - Databases**, taught by Prof. Demetris Zeinalipour and Dr. Panayiotis G. Andreou
<https://www.cs.ucy.ac.cy/~dzeina/courses/epl342/>
- **EPL451 - Data Mining on the Web**, taught by Prof. George Pallis
<http://www.cs.ucy.ac.cy/courses/EPL451/>
- **EPL233 - Object-Oriented Programming**, taught by Prof. Georgia Kapitsaki, Dr. Panayiotis G. Andreou and Dr. Demetris Trihinas
<https://www.cs.ucy.ac.cy/~dzeina/courses/epl233/>
- **EPL231 - Data Structures and Algorithms**, taught by Prof. George Pallis
<https://www.cs.ucy.ac.cy/~dzeina/courses/epl231/>
- **EPL031 - Introduction to Programming**, taught by Prof. Fudos Ioannis
<http://moodle.cs.ucy.ac.cy/course/info.php?id=101>

IX. ADVISING

- Marios Vladimirov, Panayiotis Eracleous, Philippos Papaphilippou, Philkypros Ioulianou, Winning in National ImagineCup contest (Rainbow Beams), Department of CS, University of Cyprus, Cyprus, 2014.

X. AWARDS & HONORS

- IEEE MDM'18 - Best of MDM 2018, "Decaying Telco Big Data with Data Postdiction", 19th IEEE International Conference on Mobile Data Management (MDM'18), Aalborg, Denmark, June 26 - June 28, 2018 (Geinformatica - Springer - journal invitation).
- IEEE MDM'18 - Best Demo Award, "FMS: Managing Crowdsourced Indoor Signals with the Fingerprint Management Studio", 19th IEEE International Conference on Mobile Data Management (MDM'18), Aalborg, Denmark, June 26 - June 28, 2018.
- Travel Grant Award among 200 invitees globally to attend the 4th Heidelberg Laureate Forum (HLF), Heidelberg, Germany, Sept 18 - 23, 2016.
- Appcampus Award, "Rayzit: Crowd Messaging" by Microsoft, Nokia and Aalto University (Finland), 2013.

- Startup prize award at HackCyprus sponsored by the CIIM Entrepreneurship and Innovation Centre, 2013.
- Best Mobile Application Award at HackCyprus sponsored by Cocoon Creations, 2013.
- Ranked 1st place at the Microsoft ImagineCup national competition with *iDOC* implementation, 2011.

XI. LANGUAGES

- Greek (native)
- English (fluent)

XII. PERSONAL INFORMATION

- Gender: Male.
- Date of Birth: Feb 22, 1988.
- Place of Birth: Limassol/Cyprus.
- Nationality: Cypriot.

XIII. REFERENCES

- **Zeinalipour Demetris**

Associate Professor
Department of Computer Science
University of Cyprus

Phone: +357-22-892755
E-mail: dzeina@cs.ucy.ac.cy

- **Panos K. Chrysanthis**

Professor
Department of Computer Science
University of Pittsburgh

Phone: +1-412-624-8924
E-mail: panos@cs.pitt.edu

- **Mohamed F. Mokbel**

Professor
Department of Computer Science and Engineering
University of Minnesota

Phone: (612) 626-3025
E-mail: mokbel@umn.edu

- **Wang-Chien Lee**

Associate Professor
Department of Computer Science and Engineering
The Pennsylvania State University

Phone: (814) 865-1053
E-mail: wlee@cse.psu.edu

- **Charalambos Poullis**

Associate Professor
Department of Computer Science
and Software Engineering
Concordia University

Phone: +514-848-2424
E-mail: charalambos@poullis.org