

# Constantinos Costa

## (Curriculum Vitae)

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University of Pittsburgh  
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## I. RESEARCH INTERESTS

*Big Data Management and Mobile Computing, particularly distributed query processing for spatial and spatio-temporal datasets. Spatial Big Data Modeling utilizing Machine Learning techniques.*

## 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

- Research Associate**, ADMT Lab, University of Pittsburgh, USA 2019-current
- Instructor**, Dept. of Computer Science, University of Pittsburgh, USA 01/2019-current
- Special Scientist**, Dept. of Computer Science, University of Cyprus, Cyprus 09/2018-01/2019
- Research Assistant**, DMSL Lab, University of Cyprus, Cyprus 2010-2018
- **06/2015-06/2016 (Research Assistant)**: "Big Data Processing in Telecommunication Datacenters", MTN Cyprus Ltd., Cyprus.
  - **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.
- Teaching Assistant**, University of Cyprus, Cyprus 2011-2018
- Academic Collaborator**, University of Cyprus, Nicosia, Cyprus 2009-2013

## IV. 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 (Geoinformatica - 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.
- Participation in the ACM Europe Summer School on Data Science (2018).
- Participation in the Onassis Foundation Science Lecture Series in Computer Science devoted to “BIG DATA and Applications” (2017).
- Travel Grant Award among 200 invitees globally to attend the 4th Heidelberg Laureate Forum (HLF), Heidelberg, Germany, Sept 18 - 23, 2016.
- 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.
- 2014 (Young Researcher): “New Researcher Program”, University of Cyprus, PhD Fellowship for C. Costa, Advisor: Demetrios Zeinalipour-Yazti.
- 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.

## V. PUBLICATIONS

Google Scholar Citations: 165; h-index<sup>1</sup>: 7; i10-index<sup>2</sup>: 7

### 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**), 23(4): 533-557, **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, 64: 292-302, **2017**.

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

<sup>2</sup>i10-index is the number of publications with at least 10 citations.

- 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, 28(4): 925-938, **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, 25(6): 1240-1253, **2013**.

## CONFERENCE AND WORKSHOP PAPERS

- C9. “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)*, 431-436, **2019**.
- C8. “Telco Big Data Research and Open Problems”**, **Constantinos Costa** and Demetrios Zeinalipour-Yazti, *Proceedings of the 35th IEEE International Conference on Data Engineering (ICDE 2019)*, 2056-2059, **2018**.
- C7. “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)*, 106-115, **2018**.
- C6. “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)*, 11-14, **2018**.
- C5. “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, 5:1-5:5, **2017**.
- C4. “Efficient Exploration of Telco Big Data with Compression and Decaying”**, **Constantinos Costa**, Georgios Chatzimilioudis, Demetrios Zeinalipour-Yazti, Mohamed F. Mokbel, *Proceedings of the 33rd IEEE International Conference on Data Engineering (ICDE 2017)*, 1332-1343, **2017**.
- C3. “Distributed In-Memory Processing of All k Nearest Neighbor Queries”**, Georgios Chatzimilioudis, **Constantinos Costa**, Demetrios Zeinalipour-Yazti and Wang-Chien Lee and Evaggelia Pitoura, *Proceedings of the 32nd IEEE International Conference on Data Engineering (ICDE 2016)*, 1490-1491, **2016**.
- C2. “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 (MobiSocial 2015)*, (2):98-103, **2015**.
- C1. “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)*, 115-132, **2013**.

## DEMO PAPERS

- D7. “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)*, 12(12): 1878-1881, **2019**.
- D6. “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)*, 288-289, **2018**.
- D5. “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)*, 280-281, June 25 - June 28, 2018, AAU, Aalborg, Denmark, **2018**.
- D4. “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)*, 1419-1420, **2017**.
- D3. “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)*, 465-466, **2012**.
- D2. “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**), 1288-1291, **2011**.
- D1. 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**), **2011**.

## 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**.

## PRESENTATIONS

- **Demo Presentation**, “CAPRIO: Graph-based Integration of Indoor and Outdoor Data for Path Discovery”, *The 45th International Conference on Very Large Data Bases (VLDB’19)*, Los Angeles, California, August 26 - August 30, **2019**.
- **Presentation**, “Telco Big Data Research and Open Problems”, The the 35th IEEE International Conference on Data Engineering (ICDE 2019), 2056-2059, Macao, Macao, April 8 - April 11, **2019**.

- **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**.

## VI. DEPARTMENTAL SERVICE

- **Mentor**, 5th SteelHacks hackathon hosted at the University of Pittsburgh, 2019
- **Evaluator**, Second ACM ICPC (Inter-Collegiate Programming Competition) Cyprus Competition, 2018
- **Evaluator/ Organizer**, 6th National Logipaignion Contest for Elementary and High School Students, 2014

## VII. PROFESSIONAL ACTIVITY & MEMBERSHIPS

- **Organizing Committee Member:**
  - **Vice Program/Communication Chair** Self-managing Database Systems (SMDB 2020), April 20, 2020 - Dallas, Texas, **2020**.
  - **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**.

- **Referee for Journals and Magazines:**

- COMP - Computing Journal, 2019.
- IJCIS - International Journal of Cooperative Information Systems, 2019.
- COMP - Computing Journal, 2018.
- 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.

- **External Referee for Conferences/Symposiums:**

- IEEE ICDE - Intl. Conference on Data Engineering, 2020.
- EDBT/ICDT - Intl. Conference on Extending Database Technology, 2020.
- 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.

## VIII. TEACHING WORK EXPERIENCE

### TEACHING APPOINTMENTS

**Instructor**, Dept. of Computer Sc., University of Pittsburgh

2019-current

- **CS 1645/2045 - Introduction to High Performance Computing**, (Fall 2019)  
<http://db.cs.pitt.edu/courses/cs1645/20-1/>
- **CS/COE 0445 - Data Structures**, (Fall 2019)  
<http://db.cs.pitt.edu/courses/cs0445/20-1/>
- **CS 1555/2055 - Database Management Systems**, (Summer 2019)  
<http://db.cs.pitt.edu/courses/cs1555/19-3/>
- **CS 1555/2055 - Database Management Systems**, (Spring 2019)  
<http://db.cs.pitt.edu/courses/cs1555/19-2/>
- **CS0008 - Introduction to Computer Programming**, (Spring 2019)  
<http://db.cs.pitt.edu/courses/cs0008/19-2/>

**Special Scientist**, 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

- **BS Internships/Capstone Projects Supervised:**
  - Evan Kiebler and Evan McEllhenny, BSc Students, “Context-Aware Path Recommendation, Department of CS, University of Pittsburgh, Pittsburgh, PA, USA, 2019. (Co-advised Panos Chrysanthis)

- **Other 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. LANGUAGES

- Greek (native)
- English (fluent)

## XI. PERSONAL INFORMATION

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

## XII. REFERENCES

- **Demetris Zeinalipour**

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Department of Computer Science  
University of Cyprus

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