

# STRATOS IDREOS

Associate Professor in Computer Science

Ph.D.: June 2010

Harvard John A. Paulson School of Engineering and Applied Sciences

Citations > 4300

stratos.seas.harvard.edu stratos@seas.harvard.edu daslab.seas.harvard.edu

Hindex:36, i10:72

**MAPPING DATA SYSTEMS DNA - SELF-DESIGNING DATA SYSTEMS - HARDWARE/SOFTWARE CO-DESIGN  
ACCELERATING DATA SCIENCE - DATA EXPLORATION - END-TO-END DATA SCIENCE PERFORMANCE**

## AWARDS



### 2020 ACM SIGMOD Contributions Award

For "the innovative work in the data management community to encourage scientific reproducibility of our publications".



**2019 Department of Energy Early Career Award.** For research on Data Structure Alchemy



### 2017 Best of ACM SIGMOD

Our paper on "Monkey: Optimal Navigable Key-value Store" was selected as one of the (4) best papers of the ACM SIGMOD International Conference on Management of Data



**2017 & 2018 ACM SIGMOD Most Reproducible Paper Award**



**2016 Facebook Faculty Award.** For our work on self-designing key-value stores



**2016 & 2018 NetApp Faculty Award.** For our work on self-designing data systems



**2015 Rising Star Award.** By the IEEE Technical Committee on Data Engineering.

"For breakthroughs in adaptive data management systems that allow users rich data exploration capabilities without a priori knowledge of the data or queries".



**2015 NSF Career Award.** For research on Evolutionary Data Systems.



**2015 Communications of the ACM Research Highlights**

For the ACM SIGMOD'12 paper on NoDB



**2012 Veni Award.** By the Dutch Organization For Research (NWO).

Awarded to "the most promising young researchers in the Netherlands".

Very  
Large  
Data  
Bases

**2012 Best of VLDB.** Our paper on Concurrency Control for Adaptive Indexing was selected as one of the best papers in the 38th International Conference on Very Large Databases (VLDB).

**2011 Cor Baayen Award.** European Research Consortium for Informatics and Mathematics (ERCIM).  
Named "Most promising European young researcher in computer science and applied mathematics".



Best Ph.D. thesis across all areas of computer science and applied mathematics over all 'ERCIM countries': Austria, Belgium, Cyprus, Czech Republic, Finland, France, Germany, Greece, Hungary, Italy, Luxembourg, Norway, Poland, Portugal, Spain, Sweden, Switzerland, The Netherlands, UK.



**2011 ACM SIGMOD Jim Gray Doctoral Dissertation Award**

By the ACM Special Interest Group on Management of Data

Very  
Large  
Data  
Bases

**2011 VLDB Best Paper Award** in Challenges and Visions



**2010 IBM zEnterprise System Recognition Award**

For contributions in the IBM ISAO Smart Analytics Big Data product.



**2010 Named "Distinguished Scientist Excelling in Research Abroad"**

By the Hellenic Ministry of National Defense



**2005 Best Student Paper Award**

In 9th European Conf. on Research and Advanced  
Technology for Digital Libraries (ECDL)

## Student Awards

**1st Prize ACM SIGMOD 2020 Undergraduate Research Competition.** Winner: M. Jagadeesan

**1st Prize ACM SIGMOD 2019 Undergraduate Research Competition.** Winner: H. Gupta, V. Jain, J. Lennon

**1st Prize ACM SIGMOD 2018 Undergraduate Research Competition.** Winner: T. Lively, C. Mendizabal, L. Schroeder

**1st Prize ACM SIGMOD 2017 Undergraduate Research Competition.** Winner: Graham Lustiber

**1st Prize ACM SIGMOD 2016 Undergraduate Research Competition.** Winner: Alex Liu

**Microsoft PhD Fellowship** 2016. Winner: Lukas Maas

**Microsoft PhD Fellowship** 2019. Winner: Wilson Qin

## EMPLOYMENT

Associate Professor in Computer Science, <b>Harvard University</b> , USA	1/2019 - now
Advisory Board Member, <b>Genesis AI</b>	7/2018 - now
Principal AI Software Architect <b>SimpleBet</b>	11/2018 - 5/2020
Assistant Professor in Computer Science, <b>Harvard University</b> , USA	1/2014 - 12/2018
Scientific Staff Member (Tenure-track) Dutch National Research Center for Mathematics and Computer Science, <b>CWI</b> , The Netherlands	4/2010 - 12/2013
Visiting Professor, Data Intensive Applications and Systems group, <b>EPFL</b> , Switzerland	9/2013 - 12/2013
Visiting Professor, Database group, <b>University of Trento</b> , Trento, Italy	11/2011
Visiting Professor, Database group, <b>National University of Singapore</b> , Singapore	4/2011
Research Intern, Database group, <b>IBM Almaden Research Center</b> , USA	7/2010 - 12/2010
Scientific Staff, Data Intensive Applications and Systems group, <b>EPFL</b> , Switzerland	12/2009 - 4/2010
Research Intern, Database group, <b>Microsoft Research</b> Redmond, USA	1/2009 - 4/2009
Researcher (Ph.D.), Database Architectures group, Dutch National Research Center for Mathematics and Computer Science, <b>CWI</b> , The Netherlands	10/2005 - 11/2009
Researcher, Intelligent Systems Laboratory, <b>Technical University of Crete</b> , Greece	8/2003 - 9/2005

## EDUCATION

<b>Ph.D. in Computer Science</b> , University of Amsterdam, The Netherlands Thesis: Database Cracking: Towards Auto-Tuning Database Kernels Supervised by Prof. Martin Kersten and Prof. Stefan Manegold	10/2005 - 6/2010
<b>Master in Computer Engineering</b> , Technical University of Crete, Greece Thesis: Distributed Evaluation of Continuous Equi-join Queries over Large Structured Overlay Networks  Supervised by Prof. Manolis Koubarakis	7/2003 - 9/2005
<b>Diploma in Electronic and Computer Engineering</b> Technical University of Crete, Greece (5 year school) Thesis: P2P-DIET: A query and notification service based on mobile agents for rapid implementation of peer-to-peer applications Supervised by Prof. Manolis Koubarakis	9/1997 - 6/2003

## STUDENT SUPERVISION &amp; TEACHING

Brian Hentschel, Lukas Maas, Abdul Wasay, Michael Kester, Wilson Qin	<b>PhD</b>
Konstantinos Zoumpatianos, Niv Dayan, Manos Athanassoulis, Subarna Chatterjee	<b>Postdoc</b>
Demi Guo, Drhuv Gupta, Tarik Moon, Stella Pantella, Alex Liu, Ore Babarinsa, Yifan Wu	<b>Undergrad</b>

<b>Data Systems</b>	Spring 2014, Fall 2015-2019	<a href="http://daslab.seas.harvard.edu/classes/cs165/">http://daslab.seas.harvard.edu/classes/cs165/</a>
<b>Big Data Systems</b>	Fall 2014, Spring 2016-2020	<a href="http://daslab.seas.harvard.edu/classes/cs265/">http://daslab.seas.harvard.edu/classes/cs265/</a>

## PUBLICATIONS

## REFEREED CONFERENCES and JOURNALS

- Stacked Filters: Learning to Filter by Structure. Kyle Deeds, Brian Hentschel, and Stratos Idreos. In Proceedings of the VLDB Endowment, vol. 14, no. 4, pp. 600 - 612, 2021. **PVLDB 2021**
- Rosetta: A Robust Space-Time Optimized Range Filter for Key-Value Stores. Siqiang Luo, Subarna Chatterjee, Rafael Ketsetsidis, Niv Dayan, Wilson Qin, Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2020 **SIGMOD 2020**
- MotherNets: Rapid Deep Ensemble Learning. Abdul Wasay, Brian Hentschel, Yuze Liao, Sanyuan Chen, Stratos Idreos. The Conference on Machine Learning and Systems, 2020 **MLSys 2020**
- Optimal Column Layout for Hybrid Workloads. Manos Athanassoulis, Kenneth Bogh, Stratos Idreos. In Proceedings of the Very Large Databases Endowment (PVLDB), 2019 **PVLDB 2019**
- Learning Data Structure Alchemy. Stratos Idreos, Kostas Zoumpatianos, Subarna Chatterjee, Wilson Qin, Abdul Wasay, Brian Hentschel, Mike Kester, Niv Dayan, Demi Guo, Minseo Kang, Yiyu Sun. IEEE Data Engineering Bull. Sep, 2019 **IEEE DEBull 2019**
- The Log-Structured Merge-Bush & the Wacky Continuum. Niv Dayan, Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2019 **SIGMOD 2019**
- Design Continuums and the Path Toward Self-Designing Key-Value Stores that Know and Learn. Stratos Idreos, Niv Dayan, Wilson Qin, Mali Akmanalp, Sophie Hilgard, Andrew Ross, James Lennon, Varun Jain, Harshita Gupta, David Li, and Zichen Zhu. Proceedings of CIDR Conference on Innovative Data Systems Research, 2019. **CIDR 2019**
- Optimal Bloom Filters and Adaptive Merging for LSM-Trees. Niv Dayan, Manos Athanassoulis, Stratos Idreos. ACM Transactions on Database Systems, Dec 2018 **TODS 2018**
- The Periodic Table of Data Structures. Stratos Idreos, Kostas Zoumpatianos, Manos Athanassoulis, Niv Dayan, Brian Hentschel, Michael S. Kester, Demi Guo, Lukas Maas, Wilson Qin, Abdul Wasay, Yiyu Sun. IEEE Data Engineering Bull. Sep, 2018 **IEEE DEBull 2018**
- Smooth Scan: Robust Access Path Selection Without Cardinality Estimation. Renata Borovica, Stratos Idreos, Anastassia Ailamaki, Marcin Zukowski, Campbell Fraser. The International Journal on Very Large Databases (VLDBJ), 2018 **VLDBJ 2018**
- The Data Calculator: Data Structure Design and Cost Synthesis From First Principles, and Learned Cost Models. Stratos Idreos, Konstantinos Zoumpatianos, Brian Hentschel, Michael Kester, Demi Guo. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2018 **SIGMOD 2018**
- Dostoevsky: Better Space-Time Trade-Offs for LSM-Tree Based Key-Value Stores via Adaptive Removal of Superfluous Merging. Niv Dayan, Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2018 **SIGMOD 2018**
- Column Sketches: A Scan Accelerator for Rapid and Robust Predicate Evaluation. Brian Hentschel, Michael Kester, Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2018 **SIGMOD 2018**
- Monkey: Optimal Navigable Key-Value Store. Niv Dayan, Manos Athanassoulis, Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2017 **SIGMOD 2017**  
**Best of SIGMOD.**
- Access Path Selection in Main-Memory Optimized Data Systems: Should I Scan or Should I Probe? Michael Kester, Manos Athanassoulis, Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2017 **SIGMOD 2017**
- Data Canopy: Accelerating Exploratory Statistical Analysis. Abdul Wasay, Xinding Wei, Niv Dayan, Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2017 **SIGMOD 2017**
- UpBit: Scalable In-Memory Updatable Bitmap Indexing. Manos Athanassoulis, Zheng Yan, Stratos Idreos. In Proc. of the ACM SIGMOD Intern. Conference on Management of Data, 2016. **SIGMOD 2016**

## Stratos Idreos, Curriculum Vitae, January 2021

- GeckoFTL: Scalable Flash Translation Techniques For Very Large Flash Devices. Niv Dayan, Phillippe Bonnet, Stratos Idreos. In Proc. of the ACM SIGMOD Intern. Conference on Management of Data, 2016 **SIGMOD 2016**
- Adaptive Indexing over Encrypted Data. Panagiotis Karras, Saad Malhotra, Rudrika Bhatt, Artyom Nikitin, Denis Antyukhov, and Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2016 **SIGMOD 2016**
- Designing Access Methods: The RUM Conjecture. Manos Athanassoulis, Michael Kester, Lukas Maas, Radu Stoica, Stratos Idreos, Anastassia Ailamaki, and Mark Callaghan. In Proceedings of the International Conference on Extending Database Technology (EDBT), 2016 **EDBT 2016**
- ADS: The Adaptive Data Series Index. Konstantinos Zoumpatianos, Stratos Idreos, Themis Palpanas. The International Journal on Very Large Databases (VLDBJ), 2016 **VLDBJ 2016**
- Queriosity: Automated Data Exploration. Abdul Wasay, Manos Athanassoulis, and Stratos Idreos. In Proceedings of the IEEE International Congress on Big Data, 2015 **BIG DATA 2016**
- Holistic Indexing in Main-memory Column-stores. Eleni Petraki, Stratos Idreos, Stefan Manegold. In Proc. of the ACM SIGMOD Intern. Conference on Management of Data, 2015 **SIGMOD 2015**
- Smooth Scan: Statistics-Oblivious Access Paths. Renata Borovica, Stratos Idreos, Anastassia Ailamaki, Marcin Zukowski, Campbell Fraser. In Proceedings of the IEEE International Conference on Data Engineering (ICDE), 2015 **ICDE 2015**
- NoDB: Efficient Query Execution on Raw Data Files. Ioannis Alagiannis, Renata Borovica, Miguel Branco, Stratos Idreos and Anastasia Ailamaki. Communications of the ACM, Research Highlights, 2015 **CACM 2015**
- H2O: A Hands-free Adaptive Store. Ioannis Alagiannis, Stratos Idreos, Anastasia Ailamaki. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2014 **SIGMOD 2014**
- Indexing for Interactive Exploration of Big Data Series. Konstantinos Zoumpatianos, Stratos Idreos, Themis Palpanas. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2014 **SIGMOD 2014**
- Joins On Encoded and Partitioned Data. Jae-Gil Lee, Gopi Attaluri, Ronald Barber, Naresh Chainani, Oliver Draese, Frederick Ho, Stratos Idreos, Min-Soo Kim, Sam Lightstone, Guy Lohman, Konstantinos Morfonios, Keshava Murthy, Ippokratis Pandis, Lin Qiao, Vijayshankar Raman, Vincent Kalandai Samy, Richard Sidle, Knut Stolze and Liping Zhang. In Proceedings of the Very Large Databases Endowment (PVLDB), 2014 **PVLDB 2014**
- Transactional Support for Adaptive Indexing. Goetz Graefe, Felix Halim, Stratos Idreos, Harumi Kuno, Stefan Manegold, Bernhard Seeger. The International Journal on Very Large Databases (VLDBJ). 23(2):303-328, 2014 **VLDBJ 2014**
- Transactions on Large-Scale Data- and Knowledge-Centered Systems. Christos Tryfonopoulos, Stratos Idreos, Manolis Koubarakis, Paraskevi Raftopoulou. Distributed Large-Scale Information Filtering. XIII Lecture Notes in Computer Science. 13:91-122, 2014 **TLSDKS 2014**
- dbTouch: Analytics at your Fingertips. Stratos Idreos and Erietta Liarou. In Proceedings of the 7th International Conference on Innovative Data Systems Research (CIDR), 2013 **CIDR 2013**
- Enhanced Stream Processing in a DBMS Kernel. Erietta Liarou, Stratos Idreos, Stefan Manegold and Martin L. Kersten. In Proceedings of the 16th International Conference on Extending Database Technology (EDBT), 2013 **EDBT 2013**
- The Design and Implementation of Modern Column-Oriented Database Systems. Daniel Abadi, Peter Boncz, Stavros Harizopoulos, Stratos Idreos, Samuel Madden. Foundations and Trends in Databases. 5(3):197-280, 2013 **FNT 2013**
- NoDB: Efficient Query Execution on Raw Data Files. Ioannis Alagiannis, Renata Borovica, Miguel Branco, Stratos Idreos and Anastasia Ailamaki. In Proceedings of the 32nd ACM SIGMOD International Conference on Management of Data, 2012 **SIGMOD 2012**
- Stochastic Database Cracking: Towards Robust Adaptive Indexing in Main-Memory Column-Stores. Felix Halim, Stratos Idreos, Panagiotis Karras and Roland H. C. Yap. In Proceedings of the Very Large Databases Endowment (PVLDB), 5(6): 502-513, 2012 **PVLDB 2012**

## Stratos Idreos, Curriculum Vitae, January 2021

Concurrency Control for Adaptive Indexing. Goetz Graefe, Felix Halim, Stratos Idreos, Harumi A. Kuno, Stefan Manegold. In Proceedings of the Very Large Databases Endowment (PVLDB), 5(7): 656-667, 2012. <a href="#">Best of VLDB</a> .	<b>PVLDB 2012</b>
Business Analytics in (a) Blink. Ronald Barber, Peter Bendel, Marco Czech, Oliver Draese, Frederick Ho, Namik Hrlje, Stratos Idreos, Min-Soo Kim, Oliver Koeth, Jae-Gil Lee, Tianchao Tim Li, Guy M. Lohman, Konstantinos Morfonios, René Müller, Keshava Murthy, Ippokratis Pandis, Lin Qiao, Vijayshankar Raman, Richard Sidle, Knut Stolze, Sandor Szabo. IEEE Data Engineering Bull. 35(1): 9-14, 2012	<b>IEEE DEBull 2012</b>
MonetDB: Two Decades of Research in Column-oriented Database Architectures. Stratos Idreos, Fabian Groffen, Niels Nes, Stefan Manegold, K. Sjoerd Mullender, Martin L. Kersten. IEEE Data Engineering Bull. 35(1): 40-45, 2012	<b>IEEE DEBull 2012</b>
Too Many Links in the Horizon; What is next? Linked Views and Linked History. Erietta Liarou and Stratos Idreos. In Proc. of the 10th International Semantic Web Conference (ISWC), 2011	<b>ISWC 2011</b>
Here are my Data Files. Here are my Queries. Where are my Results? Stratos Idreos, Ioannis Alagiannis, Ryan Johnson and Anastasia Ailamaki. In Proceedings of the 5th International Conference on Innovative Data Systems Research (CIDR), 2011	<b>CIDR 2011</b>
Merging What's Cracked, Cracking What's Merged: Adaptive Indexing in Main-Memory Column-Stores. Stratos Idreos, Stefan Manegold, Harumi Kuno and Goetz Graefe. In Proceedings of the Very Large Databases Endowment (PVLDB), 4(9): 585-597, 2011	<b>PVLDB 2011</b>
The Researcher's Guide to the Data Deluge: Querying a Scientific Database in Just a Few Seconds. Martin Kersten, Stratos Idreos, Stefan Manegold and Erietta Liarou. In Proceedings of the Very Large Databases Endowment (PVLDB), 4(12): 174-177, 2011 <a href="#">Best paper award in Challenges and Visions</a>	<b>PVLDB 2011</b>
Benchmarking Adaptive Indexing. Goetz Graefe, Stratos Idreos, Harumi Kuno and Stefan Manegold. In Proceedings of the 2nd TPC Technology Conference on Performance Evaluation & Benchmarking (TPCTC), 2010	<b>TPCTC 2010</b>
Estimating the Compression Fraction of an Index Using Sampling. Stratos Idreos, Raghav Kaushik, Vivek Narasayya, Ravishankar Ramamurthy. In Proc. of the 22nd IEEE Intern. Conference in Data Engineering (ICDE), 2010	<b>ICDE 2010</b>
Self-organizing Tuple Reconstruction In Column-stores. Stratos Idreos, Martin Kersten and Stefan Manegold. In Proc. of the 29th ACM SIGMOD International Conference on Management of Data, 2009	<b>SIGMOD 2009</b>
Exploiting the Power of Relational Databases for Efficient Stream Processing. Erietta Liarou, Romulo Goncalves and Stratos Idreos. In Proc. of the 19th International Conference on Extending Database Technology (EDBT), 2009	<b>EDBT 2009</b>
Continuous Multi-way Joins over Distributed Hash Tables. Stratos Idreos, Erietta Liarou and Manolis Koubarakis. In Proc. of the 11th Intern. Conference on Extending Database Technology (EDBT), 2008	<b>EDBT 2008</b>
Continuous RDF Query Processing over DHTs. Erietta Liarou, Stratos Idreos and Manolis Koubarakis. In Proceedings of the 6th International Semantic Web Conference (ISWC), 2007	<b>ISWC 2007</b>
Updating a Cracked Database. Stratos Idreos, Martin Kersten and Stefan Manegold. In Proceedings of the 27th ACM SIGMOD International Conference on Management of Data, 2007	<b>SIGMOD 2007</b>
Database Cracking. Stratos Idreos, Martin Kersten and Stefan Manegold. In Proceedings of the 3rd International Conference on Innovative Data Systems Research (CIDR), 2007	<b>CIDR 2007</b>
Evaluating Conjunctive Triple Pattern Queries over Large Structured Overlay Networks. Erietta Liarou, Stratos Idreos, Manolis Koubarakis. In Proc. of the 5th Intern. Semantic Web Conference (ISWC), 2006	<b>ISWC 2006</b>
Distributed Evaluation of Continuous Equi-join Queries over Large Structured Overlay Networks. Stratos Idreos, Christos Tryfonopoulos and Manolis Koubarakis. In Proc. of the 22nd IEEE International Conference in Data Engineering (ICDE), 2006	<b>ICDE 2006</b>
Publish/Subscribe Functionality in IR Environments using Structured Overlay Networks. Christos Tryfonopoulos, Stratos Idreos and Manolis Koubarakis. In Proceedings of the 28th Annual International ACM SIGIR Conference, 2005	<b>SIGIR 2005</b>

## Stratos Idreos, Curriculum Vitae, January 2021

- LibraRing: An Architecture for Future Digital Libraries Based on Structured Overlay Networks. Christos Tryfonopoulos, Stratos Idreos and Manolis Koubarakis. In Proceedings of the 9th European Conference on Research and Advanced Technology for Digital Libraries (ECDL), 2005 **Best student paper award** **ECDL 2005**
- Publish/Subscribe for RDF-based P2P Networks. Paul-Alexandru Chirita, Stratos Idreos, Manolis Koubarakis and Wolfgang Nejdl. In Proc. of the 1st European Semantic Web Conference (ESWC), 2004 **ESWC 2004**
- Selective Information Dissemination in P2P Networks: Problems and Solutions. Manolis Koubarakis, Christos Tryfonopoulos, Stratos Idreos and Yannis Drougas. ACM SIGMOD Record, Special issue on Peer-to- Peer Data Management, 32(3), September 2003 **SIGMOD Record 2003**

## TUTORIALS

- Key-Value Storage Engines. Stratos Idreos, Mark Callaghan. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2020 **SIGMOD 2020**
- From Auto-tuning One Size Fits All to Self-designed and Learned Data-intensive Systems. Stratos Idreos, Tim Kraska. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2019 **SIGMOD 2019**
- Design Tradeoffs of Data Access Methods. Manos Athanassoulis, Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2016 **SIGMOD 2016**
- Overview of Data Exploration Techniques. Stratos Idreos, Olga Papaemmanouil, Surajit Chaudhuri. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2015 **SIGMOD 2015**
- Adaptive Indexing in Modern Database Kernels. Stratos Idreos, Stefan Manegold and Goetz Graefe. In Proceedings of the 9th International Conference on Extending Database Technology (EDBT), 2012 **EDBT 2012**

## SELECTED REFEREED SHORT PAPERS

- The Automatic Scientist will be a Data System. Stratos Idreos. In Proceedings of the Biennial Conference on Innovative Data Systems Research (CIDR), 2017 **CIDR 2017**
- Main Memory Adaptive Denormalization. Alex Liu, Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2016 **SIGMOD 2016**
- Adaptive Data Skipping in Main-Memory Systems. Wilson Qin, Stratos Idreos. In Proceedings of the ACM SIGMOD Intern. Conference on Management of Data, 2016 **SIGMOD 2016**
- RINSE: Interactive Data Series Exploration with ADS+. Konstantinos Zoumpatianos, Stratos Idreos, Themis Palpanas. In Proceedings of the Very Large Databases Endowment (PVLDB), 2015 **PVLDB 2016**
- One Loop Does Not Fit All. Styliani Pantella and Stratos Idreos. In Proceedings of the ACM SIGMOD International Conference on Management of Data, 2015 **SIGMOD 2015**
- JAFAR: Near-Data Processing for Databases. Ore Babarinsa and Stratos Idreos. In Proceedings of the ACM SIGMOD Intern. Conference on Management of Data, 2015 **SIGMOD 2015**
- Beyond the Wall: Near-Data Processing for Databases. Sam Xi, Ore Babarinsa, Manos Athanassoulis, and Stratos Idreos. In Proceedings of the 11th International Workshop on Data Management on New Hardware (DaMoN), 2015 **DaMoN 2015**
- Database Cracking: Fancy Scan, not Poor Man Sort! Holger Pirk, Eleni Petraki, Stratos Idreos, Stefan Manegold and Martin L. Kersten. Proceedings of the 10th International Workshop on Data Management on New Hardware (DaMoN), 2014 **DaMoN 2015**
- MonetDB/DataCell: Online Analytics in a Streaming Column-Store. Erietta Liarou, Stratos Idreos, Stefan Manegold and Martin L. Kersten. In Proceedings of the Very Large Databases Endowment (PVLDB), 5(12): 1910-1913, 2012 **PVLDB 2012**
- NoDB in Action: Adaptive Query Processing on Raw Data. Ioannis Alagiannis, Renata Borovica, Miguel Branco, Stratos Idreos and Anastasia Ailamaki. In Proceedings of the Very Large Databases Endowment (PVLDB), 5(12): 1942-1945, 2012 **PVLDB 2012**

## Stratos Idreos, Curriculum Vitae, January 2021

Blink: Not your Father's Database. Ronald Barber, Peter Bendel, Marco Czech, Oliver Draese, Frederick Ho, Namik Hrlje, Stratos Idreos, Min-Soo Kim, Oliver Koeth, Jae Gil Lee, Tianchao Tim Lee, Guy Lohman, Konstantinos Morfonios, Keshava Murthy, Lin Qiao, Vijayshankar Raman, Richard Sidle, Knut Stolze. In Proceedings of the 5<sup>th</sup> International Workshop on Business Intelligence for Real-Time Enterprises (BIRTE). 2011

**BIRTE 2011**

P2P- DIET: An Extensible P2P Service that Unifies Ad-hoc and Continuous Querying in Super-peer Networks. Stratos Idreos, Manolis Koubarakis and Christos Tryfonopoulos. In Proceedings of the ACM SIGMOD Intern. Conference on Management of Data, 2004

**SIGMOD 2004**

## RECENT TALKS AND LECTURES

- 2019 Facebook, Google, Microsoft, Oracle
- 2018 University of Chicago, New York University, University of Washington, Waterloo University  
Vertica, NetApp, Facebook, Google
- 2017 Facebook, Google, Amazon Web Services, NetApp  
University of Dresden, Keynote at ExploreDB ACM SIGMOD workshop
- 2016 Hong Kong Chinese University, University of Wisconsin, MIT, North Carolina University  
Keynote at the 10th VLDB Workshop on Enabling Real-Time Business Intelligence
- 2015 Brown University, Buffalo University, Paris Descarte University, University of Sydney, Athens University  
Keynote at DESWeb workshop on "Data Engineering meets the Semantic Web" in IEEE ICDE

## FUNDING

- 2019 DOE Early Career Award. Data Structure Alchemy. 1M USD
- 2019 Harvard Data Science Initiative Competitive Research Fund. 69K USD
- 2019 CISCO. Rapid Training of Deep Neural Network Ensembles. 95K USD
- 2018 Physical Sciences and Engineering Accelerator Award. 70K USD.
- 2017 Dean's Competitive fund for promising scholarship. 50K USD.
- 2017-19 Facebook Research Gift. 150K USD.
- 2016, 2018 NetApp Faculty Fellowship. 100K USD.
- 2016 Facebook Faculty Award. 30K USD.
- 2015-2020 NSF Career Award. Evolutionary Data Systems. US National Foundation. 550K USD.
- 2015-2017 STARnet Research. Near Memory. 300K USD. With David Brooks and Gu -Yeon Wei.
- Industry Gifts: Facebook 10K USD; Google: 1.5K USD.
- 2012 Veni Award. 250K Euros for research on Big Data Exploration. Dutch Organization for Research (NWO)

## PATENTS

1. Systems And Methods For Designing Data Structures And Synthesizing Costs. 4/2018
2. Key-Value Stores With Optimized Merge Policies And Optimized Lsm-Tree Structures. 2/2019
3. Log-Structured Merge-Bush. 2/2019
4. Rapid And Robust Predicate Evaluation. 5/2018
5. Diffident Segment Trees In Key-Value Stores: From Point To Range Filters For (Almost) Free. 1/2019
6. Key-Value Stores With Optimized Merge Policies And Optimized LSM-tree Structures. 1/2018
7. Data Canopy: Accelerating Exploratory Statistical Analysis. 4/2017
8. Analytic Database with Optimal Navigable Key-value Store. 1/2017
9. A Query Management System and Engine Allowing for Efficient Query Execution on Raw Data Files. 11/2012

## SERVICE

### ORGANIZATION

1. PC Chair. ACM SIGMOD International Conference on Management of Data 2021
2. Advisory Board. ACM SIGMOD International Conference on Management of Data, 2015 -
3. Reproducibility Chair. ACM SIGMOD International Conference on Management of Data, 2015 -2020
4. Very Large Databases Journal Editorial Board 2020-2026



## Stratos Idreos, Curriculum Vitae, January 2021

5. Chair: International Conference on Very Large Databases (VLDB), 2021, Experimental, Analysis and Benchmark Track.
6. PC Chair. North East Database Day 2020
7. PC Chair. Hellenic Data Management Symposium, 2019
8. Workshops Chair, Intern. Conf. on Extending Database Technology (ICDE), 2018
9. Vice Chair, Intern. Conf. on Extending Database Technology (ICDE), 2017
10. PhD workshop Chair, Intern. Conf. on Extending Database Technology (ICDE), 2017
11. Sponsorship Chair. ACM SIGMOD International Conference on Management of Data, 2016 – 2017
12. Chair of Panels. 43<sup>th</sup> International Conference on Very Large Databases (VLDB), 2017, Munich
13. Chair of Demonstrations Track. 42<sup>th</sup> International Conference on Very Large Databases (VLDB), 2016
14. Chair. International Workshop on Data Management on New Hardware (DaMoN), 2016/17 with ACM SIGMOD
15. Chair of Tutorials Track. 31<sup>th</sup> IEEE International Conference on Data Engineering (ICDE), 2015
16. Chair of Demonstrations Track. 17<sup>th</sup> International Conference on Extending Database Technology (EDBT), 2014

## COMMITTEE MEMBER

17. ACM SIGMOD International Conference on Management of Data, 2020, Oregon, USA
18. ACM SIGMOD International Conference on Management of Data, 2019, Amsterdam, The Netherlands
19. ACM SIGMOD International Conference on Management of Data, 2018, Texas, USA
20. ACM SIGMOD International Conference on Management of Data, 2017, North Carolina, USA
21. 8<sup>th</sup> International Conference on Innovative Data Systems Research (CIDR), 2017, Santa Cruz, CA, USA
22. ACM SIGMOD International Conference on Management of Data, 2016, San Francisco, California, USA
23. IEEE International Conference on Data Engineering (ICDE), 2016, Helsinki, Finland
24. ACM International Conference on Information and Knowledge Management (CIKM), 2015, Melbourne, Australia
25. National Science Foundation, Directorate for Computer & Information Science & Engineering, (NSF CISE), 2015
26. International Journal on Very Large Databases (VLDBJ), 2015
27. ACM Transactions on Database Systems (TODS), 2015
28. 41<sup>th</sup> International Conference on Very Large Databases (VLDB), 2015, Hawaii, USA
29. 7<sup>th</sup> International Conference on Innovative Data Systems Research (CIDR), 2015, Monterey, CA, USA
30. 13<sup>th</sup> USENIX File and Storage Technologies (FAST) Conference, 2015, Santa Clara, CA, USA
31. International Conference on Extending Database Technology (EDBT), 2015, Brussels, Belgium
32. ACM SIGMOD International Conference on Management of Data, 2015, Melbourne, Australia
33. International Workshop on Cloud Data and Platforms (CloudDP), with EuroSys, Bordeaux, France, 2015
34. International Workshop on Exploratory Search in Databases and the Web (ExploreDB), 2015, with ACM SIGMOD
35. International Workshop on Big Data Management on Emerging Hardware (HARDS), with IEEE ICDE, Seoul 2015
36. National Science Foundation, Directorate for Computer & Information Science & Engineering, (NSF CISE), 2014
37. 10<sup>th</sup> International Workshop on Data Management on New Hardware (DaMoN), 2014, with ACM SIGMOD,
38. ACM International Conference on Information and Knowledge Management (CIKM), 2014, Shanghai, China
39. International Workshop on Self-Managing Database Systems (SMDB), 2014, with IEEE ICDE, Chicago, USA
40. 1<sup>st</sup> International Workshop on Data analytics in the Cloud (DanaC), 2014, with ACM SIGMOD, Snowbird Utah, USA
41. 30<sup>th</sup> IEEE International Conference on Data Engineering (ICDE), 2014, Chicago, USA
42. 40<sup>th</sup> International Conference on Very Large Databases (VLDB), 2014, Hangzhou, China
43. 9<sup>th</sup> International Workshop on Self-Managing Database Systems (SMDB), 2014, Chicago, USA
44. IEEE International Conference on Big Data (IEEE BigData), 2013, Silicon Valley, CA, USA
45. 33<sup>rd</sup> ACM SIGMOD International Conference on Management of Data 2013, New York, USA
46. 6<sup>th</sup> International Conference on Innovative Data Systems Research (CIDR), 2013, Asilomar, California, USA
47. 39<sup>th</sup> International Conference on Very Large Databases (VLDB), 2013, Trento, Italy
48. 16<sup>th</sup> International Conference on Extending Database Technology (EDBT), 2013, Genoa, Italy
49. 8<sup>th</sup> International Workshop on Self Managing Database Systems (SMDB), 2013, Brisbane, Australia
50. 29<sup>th</sup> British National Conference on Databases (BNCOD), 2013, Oxford, UK
51. 6<sup>th</sup> International Workshop on Testing Database Systems (DBTest), 2013, New York, USA
52. International Workshop on Linked Science (LISC), 2013, Sydney, Australia
53. 2<sup>nd</sup> International Conference on Data Management Technologies and Applications (DATA) 2013, Reykjavik, Iceland
54. E.W.R. Steacie Memorial Fellowship, Natural Sciences and Engineering Research Council of Canada (NSERC)'13
55. International Journal of Big Data (IJBD), Science and Engineering Research Support society
56. ACM SIGMOD Jim Gray Doctoral Dissertation Award, 2012
57. 32<sup>nd</sup> ACM SIGMOD International Conference on Management of Data 2012, Arizona, USA
58. 38<sup>th</sup> International Conference on Very Large Databases (VLDB) 2012, Istanbul, Turkey
59. 28<sup>th</sup> IEEE International Conference on Data Engineering (ICDE) 2012, Washington DC, USA
60. 14<sup>th</sup> International Conference on Extending Database Technology (EDBT) 2011, Uppsala, Sweden
61. 27<sup>th</sup> IEEE International Conference on Data Engineering (ICDE) 2011, Ph.D. Workshop, Hanover, Germany
62. 6<sup>th</sup> International Workshop on Self Managing Database Systems (SMDB) 2011, Hanover, Germany
63. 31<sup>st</sup> ACM SIGMOD International Conference on Management of Data 2011, Repeatability, Athens, Greece
64. 12<sup>th</sup> International Conference on Extending Database Technology (EDBT) 2009, Saint-Petersburg, Russia
65. IEEE journal on Transactions on Knowledge and Data Engineering (TKDE)