

6 30
— 7 5

2019

PROGRAM

SIGM~~X~~D/
A M S P~~X~~D S
T E R
D A M 2X19

Welcome Message

Welcome to 2019 ACM SIGMOD International Conference on the Management of Data!

This year, the conference is held in the city center of Amsterdam, capital of The Netherlands. Amsterdam is an internationally oriented city, home to people with origins from all over the world. This used to be already the case even back in the 16th and 17th century, when Amsterdam was the world's biggest trading and financial center; establishing the world's first stock exchange in 1602.

SIGMOD/PODS 2019 is held in the original Amsterdam Stock and Commodities Exchange, constructed by Dutch architect Berlage between 1896 and 1903, which now serves as the well-equipped Amsterdam Conference Center. This architect and his apprentices (the school of Berlage) left an important mark on the city, being responsible for a major expansion of the city in the early 20th century. The sculptures and drawings in the Exchange building refer to the people behind the commodities traded in the various rooms ("Effecten" - stock; "Graan" - grains), e.g., depicting farmers in the grain exchange room; as a reminder that trading affects society.

Amsterdam is a city that offers many cultural activities, including the world-famous classical Concertgebouw Orchestra, as well as many museums (Amsterdam Museum, Rijksmuseum, Rembrandthuis, Anne Frank Huis). In a slight break with SIGMOD tradition, the SIGMOD opening reception will be held one day later, on Tuesday night, when the SIGMOD/PODS attendees will have exclusive access to the Van Gogh museum. The Wednesday conference dinner is orga-

nized across the water in Amsterdam North, in Noorderlicht Cafe in a festival-like environment. This used to be harbour area and was less-populated and industrial, but in the recent decade has become a hotspot for nightlife activities.

Amsterdam is also increasingly a hub for data science companies and services, with multiple universities and CWI in the vicinity; which all participate in the organization of SIGMOD/PODS 2019. On Thursday night, after the SIGMOD program finishes, there will be a meetup of Amsterdam Data Science, where the local data science community will be able to mingle with our data management research community. The SIGMOD 2019 Research Program Committee consists of the Program Chair, two Program Vice Chairs, a core committee with 37 members, and a regular committee with 98 members. During the reviewing period, we solicited additional reviews from 16 external reviewers and occasional input from 10 assistant reviewers. The committee received 430 submissions, out of which 12 were desk-rejected (i.e., without review). There was no bidding; instead, reviewer assignments were made using input from Microsoft’s Conference Management System, the Toronto Paper Matching System, and the reviewers’ background (the detailed assignment procedure is described in a paper which has been submitted for publication to SIGMOD Record). The core committee members had (roughly) double the reviewing load of the regular committee members, and in addition acted as discussion leaders and meta-reviewers for their assigned papers. There were two rounds of submissions, with deadlines in July and November, respectively. Initially, each paper received three reviews. At this point authors could read the reviews and provide feedback about potential factual errors (disclosed to the reviewers) or sensitive issues about potential mishandling (confidentially to the chair). Two additional reviews were solicited for a

paper if (a) the reviewers' expertise level was suboptimal, or (b) if there was significant score discrepancy in the first three reviews, or (c) if it was heading for rejection but had received a weak accept (or higher) by at least one reviewer. Papers were discussed extensively online; 10 were accepted based on the first round of reviews, while 311 were rejected. The authors of the remaining 97 papers were asked to revise their papers to address reviewers' criticisms; 78 revisions were ultimately accepted for a total of 88 papers which are presented in the research track. Finally, 12 papers were shepherded after acceptance to guarantee that the camera-ready version addresses all of the reviewers' comments.

Stefan Manegold, Peter Boncz
SIGMOD General Chairs
CWI, Netherlands

Anastasia Ailamaki
SIGMOD Program Chair
EPFL, Switzerland

SIGMOD 2019 Sponsors & Supporters

Supporters



Diamond Sponsor

facebook

Platinum Sponsors



Microsoft

ORACLE

ableau

Gold Sponsors



IBM Research AI



Silver Sponsors



Startup Sponsor



Platinum Publisher



Gold Publisher



Silver Publishers

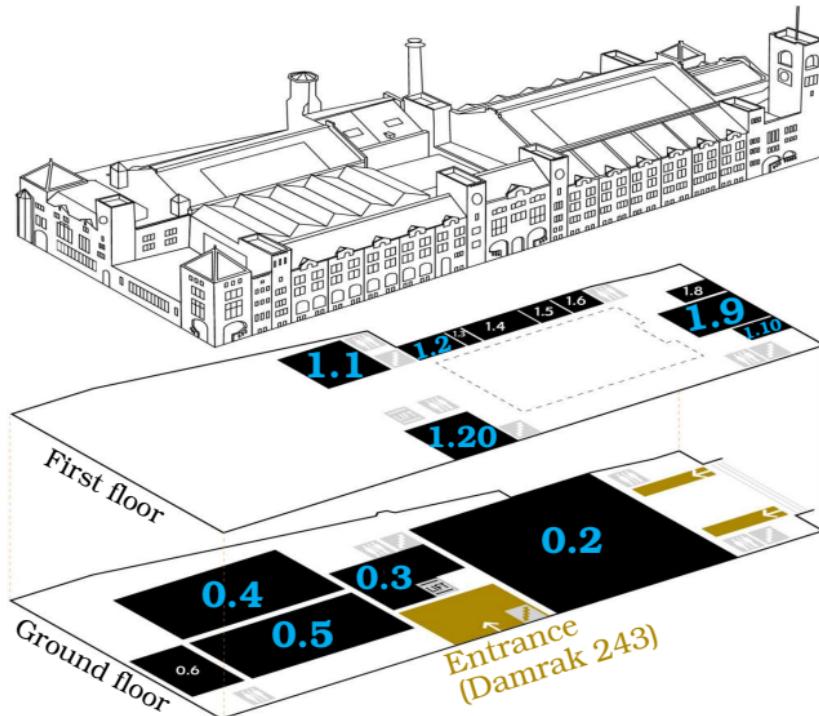


Student support

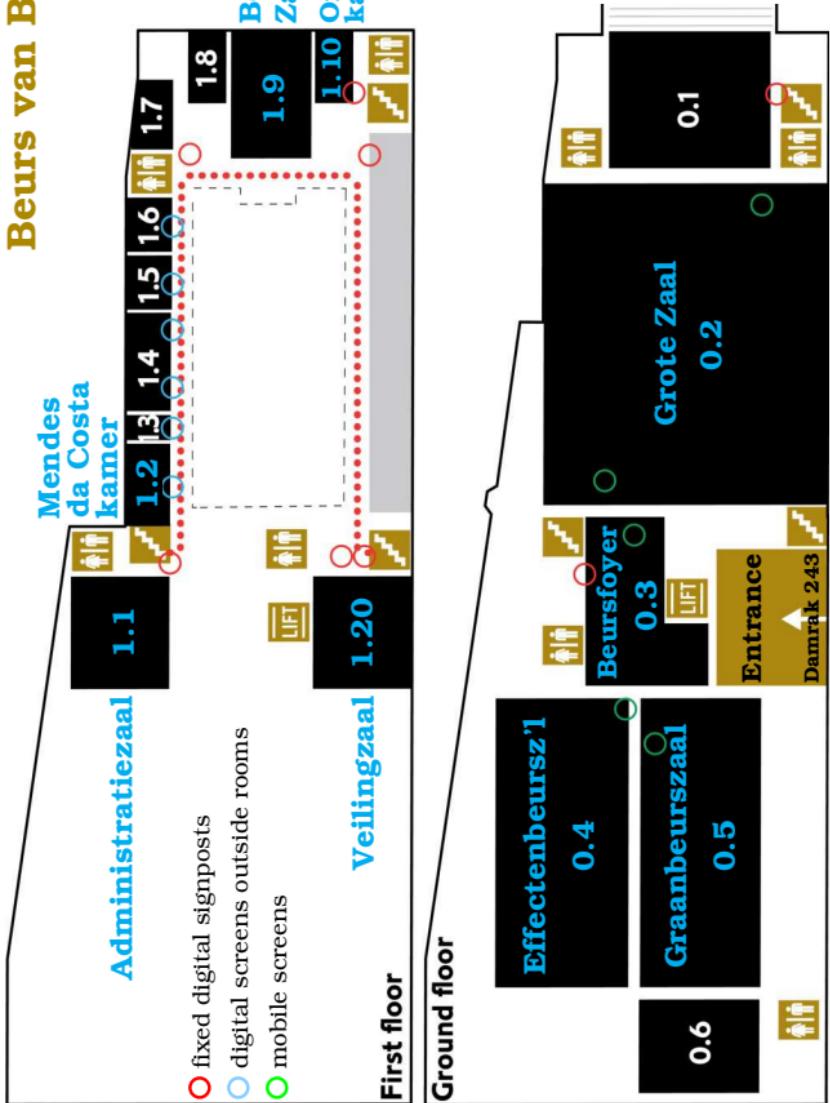


Conference Venue: Beurs van Berlage

When you enter from the street (*Damrak 243*) and walk straight on, you will be in the *Beursfoyer* (**0.3**). To your right is the *Grote Zaal* (**0.2**) ("zaal" stands for hall in Dutch; "kamer" stands for room). There, all breakfast, coffee breaks, lunches, afternoon demo/poster sessions as well as the PODS Reception on Sunday evening will be held. Also, all sponsor stands are located in the Grote Zaal. To your left are the *Graanbeurszaal* (**0.5**) and the *Effectenbeurszaal* (**0.4**). Both are large halls, of which the latter will be used for all plenary sessions. Upstairs are the other, smaller, halls and rooms: *Administratiezaal* (**1.1**), *Mendes da Costa kamer* (**1.2**), *Berlage zaal* (**1.9**), *Ontvangkamer* (**1.10**), *Veilingzaal* (**1.20**).



Beurs van Berlage



SIGMOD Reception - Van Gogh Museum



The Van Gogh Museum maintains the world's largest collection of the works of the world's most popular artist - Vincent van Gogh (1853-1890), his paintings, drawings and letters, completed with the art of his contemporaries. Each year, it receives 1.6 million visitors, making it one of the 25 most popular museums in the world.

SIGMOD/PODS'2019 is proud to offer all participants registered to the main conference exclusive access to the Van Gogh Museum for the SIGMOD opening reception; on Tuesday July 2, 2019, from 20:30 until 23:00. Your badge is our ticket into the museum, **you must bring it with you!**

We hereby like to thank **MonetDB** for sponsoring this event. There will be time to visit the museum; at the end of the walking route, back in the foyer, there will be drinks and snacks served. The reception food is intended to be dinner-replacing under moderate appetite.

Please note, again, the SIGMOD reception is on **Tuesday** evening (not Monday evening as usual in SIGMOD).

That day, the main program ends around 19:50; so participants have 40 minutes to get to the Museum, which is in the south center of Amsterdam (whereas the Beurs van Berlage conference center is in the middle of the center):

- Walking: 29 min (Instructions: tiny.cc/m3kf7y)



Leave the venue taking a left and walk south to Dam square, and straight on into Rokin. Continue walking on Rokin until its end, at Munt tower. Continue into Muntplein which becomes Vijzelstraat until crossing the first main canal bridge, after which you take a right onto Herengracht. At the first opportunity you then go left into the Nieuwe Spiegelgracht. Continue this one straight, crossing no less than 4 canals (Prinsen, Keizers, Lijnbaans, Singel). The road passes under the Rijksmuseum; and continuing straight you will hit the Van Gogh museum.

- Cycling: 10 min (Instructions: tiny.cc/m3kf7y)



You can follow the same route as with walking, above. Use the bicycle path (or street), though, rather than the pedestrian sidewalk.

- Metro 52: 19 min (Instructions: tiny.cc/vmkf7y)



Leave the venue taking a left and walk south to Dam square, and straight on into Rokin.

Earlier than indicated on the Google map, right after leaving Dam Square, there is a metro entrance, in front of Hudon's Bay. Metro 52 is Amsterdam's newest metro and its stations are quite beautiful. Take the metro in southward direction (Station Zuid) and exit at the very first stop (Vijzelgracht). Outside, take a right at the big roundabout into Weteringsschans. At the first main crossing, take a left onto the Museumbrug (bridge). The road passes under the Rijksmuseum; and continuing straight you will hit the Van Gogh museum. (*Involves ca. 16 min walking.*)

- Tram 24: 20 min (Instructions: tiny.cc/vm6i7y)



Leave the venue taking a left and walk south to Dam square. At the tram stop just before Dam square, take tram 24 in southward direction (VU medisch centrum). At the 4th stop (Marie Heinekenplein), just after passing the former Heineken Brewery building (now hosting the "Heineken Experience") leave the tram, walk a few steps back and turn left (westward) into Eerste Jacob van Campenstraat. Continue straight on westward, crossing a canal, until Museum Plein (Square) opens in front of you. On your left-hand side, across the grass field, you see the new entrance hall of the Van Gogh Museum.

(Involves ca. 12 min walking.)

- Tram 2/12: 17 min (Instructions: tiny.cc/fdkf7y)



Leave the venue taking a left and walk south to Dam square. At Dam square, go right and walk in between the Palace and the Church to the Nieuwezijds Voorburgwal. There is a tram stop there, where you can either take tram 2 or 12 – they take the same route up until its 7th stop, Van Baerlestraat, where you exit. The tram will just have passed the Van Gogh museum (it is on the left side seen from the tram), so you have to walk back a bit and cross the street.

(Involves ca. 6 min walking.)

You can of course also try to take a taxi or Uber, but taxi drivers will not be enthusiastically accepting such short trips; doing so will also not be much faster than the other options (or even slower, when stuck in a traffic jam) and quite expensive. Using a car is only recommended if walking is impossible for you. If you just want to minimize walking distance, the last option above (Tram 2 or 12) involves least walking.

<i>Sunday, June 30, 2019: Workshops & Tutorials</i>	
room time	
Effectenbeurszaal 08:00 - 08:30	Grote zaal
Berlage zaal 08:30 - 09:00	Administratiezaal
coffee 09:00 - 09:30	Yelingzaal
Tutorial 3 09:30 - 10:00	GRADEs-NDA
DEEM 10:00 - 10:30	Tutorial 1
coffee 10:30 - 11:00	DSMM
Tutorial 3 11:00 - 11:30	DEEM
GRADEs-NDA 11:30 - 12:00	Tutorial 1
Tutorial 1 12:00 - 12:30	DSMM
lunch 12:30 - 13:00	
13:00 - 13:30	
13:30 - 14:00	
Phokion Kolaitis event 14:00 - 14:30	GRADEs-NDA
DEEM 14:30 - 15:00	Tutorial 2
15:00 - 15:30	DSMM
15:30 - 16:00	
16:00 - 16:30	coffee + Workshop Posters
Phokion Kolaitis event 16:30 - 17:00	GRADEs-NDA
DEEM 17:00 - 17:30	Tutorial 2
17:30 - 18:00	DSMM
18:00 - 18:15	
18:15 - 19:00	PODS reception
19:00 - 19:30	
19:30 - 19:45	
19:45 - 20:30	
Tutorial 3: Database and Distributed Computing Foundations of Blockchains 20:30 - 21:00	
Tutorial 1: Towards Democratizing Relational Data Visualizations 21:00 - 22:00	
Tutorial 2: Exploring the Data Wilderness through Examples 22:00 - 23:00	

<i>Monday, July 1, 2019: PODS & DaMoN</i>	
<i>room</i>	
<i>time</i>	
08:00 - 08:30	
08:30 - 09:00	Effectenbeurszaal
09:00 - 09:30	Grote zaal
09:30 - 10:00	Berlage zaal
10:00 - 10:30	coffee
10:30 - 11:00	PODS Opening & Keynote <i>Differential Privacy and the US Census</i>
11:00 - 11:30	Cynthia Dwork
11:30 - 12:00	PODS 1 <i>Incomplete Information</i>
12:00 - 12:30	coffee
12:30 - 13:00	PODS <i>Test of Time Award</i> <i>Gems of PODS</i>
13:00 - 13:30	lunch
13:30 - 14:00	+ Posters: SRC, PODS, DaMoN
14:00 - 14:30	
14:30 - 15:00	PODS 2
15:00 - 15:30	<i>Enumeration and Counting</i>
15:30 - 16:00	
16:00 - 16:30	DaMoN
16:30 - 17:00	
17:00 - 17:30	PODS 3
17:30 - 18:00	<i>Information Extraction, Hashing, and Privacy</i>
18:00 - 18:30	PODS business meeting
18:30 - 19:00	
19:00 - 19:30	
19:30 - 20:00	
20:00 - 20:30	
20:30 - 21:00	
21:00 - 22:00	
22:00 - 23:00	

Tuesday, July 2, 2019: SIGMOD & PODS

<i>room</i>	<i>time</i>	<i>Effectenbeurszaal</i>	<i>Graanbeurszaal</i>	<i>Administratiezaal</i>	<i>Berlage zaal</i>	<i>Yelllingzaal</i>
	08:00 - 08:30					<i>coffee</i>
	08:30 - 08:50					SIGMOD Welcome & Opening
	08:50 - 09:20					SIGMOD Keynote 1
	09:20 - 09:50					<i>Responsible Data Science</i>
	09:50 - 10:20					Lise Getoor
	10:20 - 11:00					Tuesday SIGMOD & TODS Teaser Talks
	11:00 - 11:30					<i>coffee</i>
	11:30 - 12:00					PODS 4
	12:00 - 12:30					<i>Streams</i>
	12:30 - 12:50					
	12:50 - 13:20					<i>lunch</i>
	13:20 - 13:50					
	13:50 - 14:20					+ <i>Awards Announcements</i>
	14:20 - 14:50	Research 1	Research 3	Industry 1	PODS Tutorial 1	
	14:50 - 15:20	Query Processing &	Information Extraction	Data Applications	Making Consistency	
	15:20 - 15:50	Optimization 1	Privacy / Blockchain		Protocols Serializable	
	15:50 - 16:20	Sponsor: + a bleau				
	16:20 - 16:50					Demos A, B & Programming Contest
	16:50 - 17:20					Tuesday Posters & TODS Posters
	17:20 - 17:50					<i>(incl. Coffee & Drinks)</i>
	17:50 - 18:20					PODS 5
	18:20 - 19:00					Semistructured Data &
	19:00 - 19:30					Knowledge Graphs,
	19:30 - 19:50					Logic, & Verification
	19:50 - 20:30					
	20:30 - 21:00					SIGMOD reception @ Van Gogh Museum
	21:00 - 22:00					<i>(Museum Plein, Amsterdam)</i>
	22:00 - 23:00					<i>Sponsored by monetdb</i>

Wednesday, July 3, 2019: SIGMOD & PODS	
room	time
Effectenbeurszaal	08:00 - 08:30
Graanbeurszaal	08:30 - 09:00
Grote zaal	09:00 - 09:30
Administratiezaal	09:30 - 10:00
Berlage zaal	10:00 - 10:30
Vleilingzaal	10:30 - 11:00
	coffee
	11:00 - 11:30
SIGMOD Keynote 2 State of Public and Private Blockchains: Myths and Reality C. Mohan	
	11:30 - 12:00
Wednesday SIGMOD Teaser Talks coffee	
	12:00 - 12:30
Research 4 Distributed Data Management	12:30 - 12:50
Research 5 Provenance	12:50 - 13:20
	13:20 - 13:50
	13:50 - 14:20
Research 7 Modern Hardware	14:20 - 14:50
Data Integration / Clearing	14:50 - 15:20
	15:20 - 15:50
	15:50 - 16:20
Research 8 Query Processing & Optimization 2	16:20 - 16:50
Demos B & C + Wednesday Posters	16:50 - 17:20
	17:20 - 17:50
	17:50 - 18:20
	18:20 - 19:00
	19:00 - 19:30
	19:30 - 20:00
	20:00 - 20:30
	20:30 - 21:00
	21:00 - 22:00
	22:00 - 23:00
PODS 6 Containment & Homomorphisms	
PODS 7 Joins, Hypergraphs, & Aggregate Queries	
Industry 2 Storage and Indexing	lunch
	+ SIGMOD Business meeting
	(incl. Coffee & Drinks)
“Pipelined” / “staggered” boat transfer to Dinner (incl. Canal cruise)	
Dinner @ Noorderlicht Cafe (NDSM Plein, Amsterdam Noord)	
Sponsored by facebook	

Thursday, July 4, 2019: SIGMOD	
time	room
08:00 - 08:30	Effectenbeurszaal
08:30 - 09:00	Grote zaal
09:00 - 09:30	Graanbeurszaal
09:30 - 10:00	Administratiezaal
10:00 - 10:30	Berlage zaal
10:30 - 11:00	coffee
11:00 - 11:30	SIGMOD Award Talks
11:30 - 12:00	Thursday SIGMOD Teaser Talks
12:00 - 12:30	coffee
12:30 - 12:50	Research 11 Systems & Machine Learning
12:50 - 13:20	Research 12 Indexing
13:20 - 13:50	Research 13 Fairness, Uncertainty
13:50 - 14:20	Research 14 Graphs 2
14:20 - 14:50	lunch
14:50 - 15:20	Research 15 Graphs 3
15:20 - 15:50	Research 16 Machine Learning
15:50 - 16:20	Research 17 Scalability
16:20 - 16:50	Industry 3 Data Platforms
16:50 - 17:30	Demos C & A
17:30 - 17:50	Thursday Posters
17:50 - 18:00	ADS reception
18:00 - 18:30	ADS event
18:30 - 19:00	sponsored by
19:00 - 19:30	Elsevier
19:30 - 20:00	ADS reception
20:00 - 21:00	ADS: Amsterdam Data Science (https://amsterdamdatascience.nl/)
21:00 - 22:00	
22:00 - 23:00	

<i>Friday, July 5, 2019: Workshops & Tutorials</i>	
<i>room</i>	
<i>time</i>	
08:00 - 08:30	
08:30 - 09:00	coffee
09:00 - 09:30	Tutorial 6
09:30 - 10:00	HILDA
10:00 - 10:30	aiDM
10:30 - 11:00	SBD
11:00 - 11:30	Tutorial 6
11:30 - 12:00	HILDA
12:00 - 12:30	aiDM
12:30 - 13:00	SBD
13:00 - 13:30	lunch
13:30 - 14:00	
14:00 - 14:30	Tutorial 7
14:30 - 15:00	HILDA
15:00 - 15:30	aiDM
15:30 - 16:00	SBD
16:00 - 16:30	coffee + Workshop Posters
16:30 - 17:00	HILDA
17:00 - 17:30	aiDM
17:30 - 18:00	SBD
18:00 - 18:30	Tutorial 5
18:30 - 19:00	
19:00 - 19:30	Tutorial 4: <i>Classical and Contemporary Approaches to Big Time Series Forecasting</i>
19:30 - 20:00	Tutorial 6: <i>From Auto Tuning One Size Fits All to Self-designed and Learned Data Intensive Systems</i>
20:00 - 20:30	Tutorial 7: <i>Schemas and Types for JSON Data: From Theory to Practice</i>
20:30 - 21:00	
21:00 - 22:00	
22:00 - 23:00	Tutorial 5: <i>Data Pipelines for User Group Analytics</i>

Detailed Schedule

Sunday 06/30/2019 08:00-09:00

Coffee + Light Breakfast

(Sun 08:00-09:00)

Room: Grote Zaal

Sunday 06/30/2019 09:00-10:30

Tutorial 1: part 1

(Sun 09:00-10:30)

Room: Veilingzaal

Towards Democratizing Relational Data Visualization

Nan Tang (Qatar Foundation), Eugene Wu (Columbia University), Guoliang Li (Tsinghua University)

GRADES-NDA 2019: Session 1 (starts 08:30)

(Sun

09:00-10:30)

Room: Administratiezaal

GRADES-NDA 2019: Joint International Workshop on Graph Data Management Experiences & Systems and Network Data Analytics

Akhil Arora (EPFL), Arnab Bhattacharya (IIT Kanpur), George Fletcher (TU Eindhoven)

DEEM 2019: Session 1

(Sun 09:00-10:30)

Room: Berlage Zaal

DEEM 2019: Workshop on Data Management for End-to-End Machine Learning

Sebastian Schelter (New York University), Neoklis Polyzotis (Google), Manasi Vartak (Massachusetts Institute of Technology), Stephan Seufert (Amazon Research)

Tutorial 3: part 1

(Sun 09:00-10:30)

Room: Effectenbeurszaal

Database and Distributed Computing Foundations of Blockchains

Sujaya Maiyya (University of California, Santa Barbara), Victor Zakhary (University of California, Santa Barbara), Mohammad Javad Amiri (University of California, Santa Barbara), Divyakant Agrawal (University of California, Santa Barbara), Amr El Abbadi (University of California, Santa Barbara)

DSMM 2019: Session 1

(Sun 09:00-10:30)

Room: Mendes da Costa Kamer

DSMM 2019: the 5th Workshop on Data Science for Macro-modeling with Financial and Economic Datasets

Douglas Burdick (IBM Almaden Research Center), Rajasekar Krishnamurthy (IBM T. J. Watson Research Center), Louiga Raschid (University of Maryland)

Sunday 06/30/2019 10:30-11:00

Coffee

(Sun 10:30-11:00)

Room: Grote Zaal

Sunday 06/30/2019 11:00-12:30

Tutorial 1: part 2

(Sun 11:00-12:30)

Room: Veilingzaal

Towards Democratizing Relational Data Visualization

Nan Tang (Qatar Foundation), Eugene Wu (Columbia University),

GRADES-NDA 2019: Session 2

(Sun 11:00-12:30)

Room: Administratiezaal

**GRADES-NDA 2019: Joint International Workshop
on Graph Data Management Experiences & Systems
and Network Data Analytics**

Akhil Arora (EPFL), Arnab Bhattacharya (IIT Kanpur), George Fletcher (TU Eindhoven)

DEEM 2019: Session 2

(Sun 11:00-12:30)

Room: Berlage Zaal

**DEEM 2019: Workshop on Data Management for
End-to-End Machine Learning**

Sebastian Schelter (New York University), Neoklis Polyzotis (Google), Manasi Vartak (Massachusetts Institute of Technology), Stephan Seufert (Amazon Research)

Tutorial 3: part 2

(Sun 11:00-12:30)

Room: Effectenbeurszaal

**Database and Distributed Computing Foundations
of Blockchains**

Sujaya Maiyya (University of California, Santa Barbara), Victor Zakhary (University of California, Santa Barbara), Mohammad Javad Amiri (University of California, Santa Barbara), Divyakant Agrawal (University of California, Santa Barbara), Amr El Abbadi (University of California, Santa Barbara)

DSMM 2019: Session 2

(Sun 11:00-12:30)

Room: Mendes da Costa Kamer

DSMM 2019: the 5th Workshop on Data Science for Macro-modeling with Financial and Economic Datasets

Douglas Burdick (IBM Almaden Research Center), Rajasekar Krishnamurthy (IBM T. J. Watson Research Center), Louiza Raschid (University of Maryland)

Sunday 06/30/2019 12:30-14:00

Lunch

(Sun 12:30-14:00)

Room: Grote Zaal

Sunday 06/30/2019 14:00-15:30

Tutorial 2: part 1

(Sun 14:00-15:30)

Room: Veilingzaal

Exploring the Data Wilderness through Examples

Davide Mottin (Aarhus University), Matteo Lissandrini (Aalborg University), Yannis Velegrakis (Utrecht University), Themis Palpanas (Paris Descartes University)

GRADES-NDA 2019: Session 3

(Sun 14:00-15:30)

Room: Administratiezaal

GRADES-NDA 2019: Joint International Workshop on Graph Data Management Experiences & Systems and Network Data Analytics

Akhil Arora (EPFL), Arnab Bhattacharya (IIT Kanpur), George Fletcher (TU Eindhoven)

DEEM 2019: Session 3

(Sun 14:00-15:30)

Room: Berlage Zaal

DEEM 2019: Workshop on Data Management for

End-to-End Machine Learning

Sebastian Schelter (New York University), Neoklis Polyzotis (Google), Manasi Vartak (Massachusetts Institute of Technology), Stephan Seufert (Amazon Research)

Phokion Kolaitis Special Event: part 1

(Sun 14:00-15:30)

Room: Effectenbeurszaal

Phokion Kolaitis Special Event

Georg Gottlob (University of Oxford), Wang-Chiew Tan (Megagon Labs)

DSMM 2019: Session 3

(Sun 14:00-15:30)

Room: Mendes da Costa Kamer

DSMM 2019: the 5th Workshop on Data Science for Macro-modeling with Financial and Economic Datasets

Douglas Burdick (IBM Almaden Research Center), Rajasekar Krishnamurthy (IBM T. J. Watson Research Center), Louisa Raschid (University of Maryland)

Sunday 06/30/2019 15:30-16:30

Coffee + Workshop Posters

(Sun 15:30-16:30)

Room: Grote Zaal

Sunday 06/30/2019 16:30-18:00

Tutorial 2: part 2

(Sun 16:30-18:00)

Room: Veilingzaal

Exploring the Data Wilderness through Examples

Davide Mottin (Aarhus University), Matteo Lissandrini (Aalborg University), Yannis Velegrakis (Utrecht University), Themis Pal-

panas (Paris Descartes University)

GRADES-NDA 2019: Session 4

(Sun 16:30-18:00)

Room: Administratiezaal

GRADES-NDA 2019: Joint International Workshop on Graph Data Management Experiences & Systems and Network Data Analytics

Akhil Arora (EPFL), Arnab Bhattacharya (IIT Kanpur), George Fletcher (TU Eindhoven)

DEEM 2019: Session 4

(Sun 16:30-18:00)

Room: Berlage Zaal

DEEM 2019: Workshop on Data Management for End-to-End Machine Learning

Sebastian Schelter (New York University), Neoklis Polyzotis (Google), Manasi Vartak (Massachusetts Institute of Technology), Stephan Seufert (Amazon Research)

Phokion Kolaitis Special Event: part 2 (16:00-18:15)

(Sun 16:30-18:00)

Room: Effectenbeurszaal

Phokion Kolaitis Special Event

Georg Gottlob (University of Oxford), Wang-Chiew Tan (Megagon Labs)

DSMM 2019: Session 4

(Sun 16:30-18:00)

Room: Mendes da Costa Kamer

DSMM 2019: the 5th Workshop on Data Science for Macro-modeling with Financial and Economic Datasets

Douglas Burdick (IBM Almaden Research Center), Rajasekar Krishnamurthy (IBM T. J. Watson Research Center), Louiza Raschid (University of Maryland)

Sunday 06/30/2019 18:15-19:45

PODS Reception

(Sun 18:15-19:45)

Room: Grote Zaal

Monday 01/07/2019 08:00-08:30

Coffee + Light Breakfast

(Mon 08:00-08:30)

Room: Grote Zaal

Monday 01/07/2019 08:30-10:00

PODS Opening & Keynote

(Mon 08:30-10:00)

Room: Effectenbeurszaal

Chair: Christoph Koch

Differential Privacy and the US Census

Cynthia Dwork (Harvard University)

Monday 01/07/2019 10:00-11:00

PODS 1: Incomplete Information

(Mon 10:00-11:00)

Room: Effectenbeurszaal

Chair: Pierre Senellart

Regularizing Conjunctive Features for Classification

Pablo Barceló (University of Chile & IMFD Chile), Alexander Baumgartner (University of Chile & RISC, Johannes Kepler University), Victor Dalmau (Universitat Pompeu Fabra), Benny Kimelfeld (Technion)

Probabilistic Databases with an Infinite Open-World

Assumption

Martin Grohe (RWTH Aachen University), Peter Lindner (RWTH Aachen University)

Query Evaluation in Election Databases

Benny Kimelfeld (Technion), Phokion Kolaitis (University of California, Santa Cruz & IBM Research-Almaden), Muhammad Tibi (Technion)

DaMoN 2019: Session 1

(Mon 10:00-11:00)

Room: Berlage Zaal

DaMoN 2019: the 15th International Workshop on Data Management on New Hardware

Thomas Neumann (Technische Universität München), Ken Salem (University of Waterloo)

Monday 01/07/2019 11:00-11:30

Coffee

(Mon 11:00-11:30)

Room: Grote Zaal

Monday 01/07/2019 11:30-13:00

Gems of PODS and Test-of-Time Award (Mon 11:30-13:00)

Room: Effectenbeurszaal

Chair: Benny Kimelfeld

A General Datalog-based Framework for Tractable Query Answering

Andrea Calì (Birkbeck College), Georg Gottlob (University of Oxford), Thomas Lukasiewicz (University of Oxford)

Database Repairs and Consistent Query Answering: Origins and Further Developments

Leopoldo Bertossi (RelationalAI & Carleton University)

Remembering the Probabilistic Analysis of Latent Semantic Indexing

Christos Papadimitriou (Columbia University)

DaMoN 2019: Session 2

(Mon 11:30-13:00)

Room: Berlage Zaal

DaMoN 2019: the 15th International Workshop on Data Management on New Hardware

Thomas Neumann (Technische Universität München), Ken Salem (University of Waterloo)

Monday 01/07/2019 13:00-14:30

Lunch + Posters (PODS, DaMoN, SIGMOD Student Research Competition)

(Mon 13:00-14:30)

Room: Grote Zaal

Monday 01/07/2019 14:30-16:30

PODS 2: Enumeration and Counting

(Mon 14:30-16:30)

Room: Effectenbeurszaal

Chair: Dirk van Gucht

Efficient Logspace Classes for Enumeration, Counting, and Uniform Generation

Marcelo Arenas (PUC & IMFD Chile), Luis Alberto Croquevielle (PUC & IMFD Chile), Rajesh Jayaram (Carnegie Mellon University), Cristian Riveros (PUC & IMFD Chile)

Ranked Enumeration of Minimal Triangulations

Noam Ravid (Technion), Dori Medini (Technion), Benny Kimelfeld (Technion)

Enumeration on Trees with Tractable Combined Complexity and Efficient Updates

Antoine Amarilli (LTCI, CNRS, Télécom ParisTech, Université Paris-Saclay), Pierre Bourhis (CRIStAL, CNRS UMR 9189, Inria Lille), Stefan Mengel (CNRS, CRIL UMR 8188), Matthias Niewerth (University of Bayreuth)

Counting Database Repairs under Primary Keys Revisited

Marco Calautti (University of Edinburgh), Marco Console (University of Edinburgh), Andreas Pieris (University of Edinburgh)

The Complexity of Counting Cycles in the Adjacency List Streaming Model

John Kallaugh (University of Texas at Austin), Andrew McGregor (University of Massachusetts Amherst), Eric Price (University of Texas at Austin), Sofya Vorotnikova (University of Massachusetts Amherst)

On the Enumeration Complexity of Unions of Conjunctive Queries

Nofar Carmeli (Technion), Markus Kröll (TU Wien)

DaMoN 2019: Session 3

(Mon 14:30-16:30)

Room: Berlage Zaal

DaMoN 2019: the 15th International Workshop on Data Management on New Hardware

Thomas Neumann (Technische Universität München), Ken Salem (University of Waterloo)

Monday 01/07/2019 16:30-17:00

Coffee

(Mon 16:30-17:00)

Room: Grote Zaal

Monday 01/07/2019 17:00-18:00

PODS 3: Information Extraction, Hashing, and Privacy
(Mon 17:00-18:00)

Room: Effectenbeurszaal

Chair: Yufei Tao

Split-Correctness in Information Extraction

Johannes Doleschal (University of Bayreuth & Hasselt University), Benny Kimelfeld (Technion), Wim Martens (University of Bayreuth), Yoav Nahshon (Technion), Frank Neven (Hasselt University & Transnational University of Limburg)

Robust Set Reconciliation via Locality Sensitive Hashing

Michael Mitzenmacher (Harvard University), Tom Morgan (Harvard University & Google)

What Storage Access Privacy is Achievable with Small Overhead?

Sarvar Patel (Google), Giuseppe Persiano (Google & University of Salerno), Kevin Yeo (Google)

DaMoN 2019: Session 4

(Mon 17:00-18:00)

Room: Berlage Zaal

DaMoN 2019: the 15th International Workshop on Data Management on New Hardware

Thomas Neumann (Technische Universität München), Ken Salem (University of Waterloo)

Monday 01/07/2019 18:00-19:00

PODS Business Meeting

(Mon 18:00-19:00)

Room: Effectenbeurszaal

DaMoN 2019: Session 4 (uninterrupted from 17:00)
(Mon 18:00-19:00)

Room: Berlage Zaal

**DaMoN 2019: the 15th International Workshop on
Data Management on New Hardware**

*Thomas Neumann (Technische Universität München), Ken Salem
(University of Waterloo)*

Tuesday 02/07/2018 08:00-08:30

Coffee + Light Breakfast

(Tue 08:00-08:30)

Room: Grote Zaal

Tuesday 02/07/2018 08:30-10:20

SIGMOD Welcome + Keynote

(Tue 08:30-10:20)

Room: Effectenbeurszaal

Chair: Peter Boncz

Responsible Data Science

Lise Getoor (University of California, Santa Cruz)

Tuesday 02/07/2018 10:20-11:00

Teaser Talks for all Tuesday SIGMOD Research, Industrial Papers and TODS Posters
(Tue 10:20-11:00)

Room: Effectenbeurszaal

Chair: Peter Boncz

Tuesday 02/07/2018 11:00-11:30

Coffee

(Tue 11:00-11:30)

Room: Grote Zaal

Tuesday 02/07/2018 11:30-12:50

SIGMOD Panel on Data Ethics

(Tue 11:30-12:50)

Room: Effectenbeurszaal

Chair: H.V. Jagadish

The Responsibility Challenge for Data

H. V. Jagadish (University of Michigan), Francesco Bonchi (ISI Foundation), Tina Eliassi-Rad (Northeastern University), Lise Getoor (University of California, Santa Cruz), Krishna Gummadi (Max Planck Institute for Software Systems), Julia Stoyanovich (New York University)

PODS 4: Streams

(Tue 11:30-12:50)

Room: Veilingzaal

Chair: Pablo Barceló

Tight Trade-offs for the Maximum k-Coverage Problem in the General Streaming Model

Piotr Indyk (MIT), Ali Vakilian (MIT)

Weighted Reservoir Sampling from Distributed Streams

Rajesh Jayaram (Carnegie Mellon University), Gokarna Sharma (Kent State University), Srikanta Tirthapura (Iowa State University), David Woodruff (Carnegie Mellon University)

Distributed and Streaming Linear Programming in Low Dimensions

Sepehr Assadi (Princeton University), Nikolai Karpov (Indiana University), Qin Zhang (Indiana University)

Better Sliding Window Algorithms to Maximize Sub-additive and Diversity Objectives

Michele Borassi (Google Research), Alessandro Epasto (Google Research), Silvio Lattanzi (Google Research), Sergei Vassilvitskii (Google Research), Morteza Zadimoghaddam (Google Research)

Tuesday 02/07/2018 12:50-14:20

Lunch + SIGMOD Awards

(Tue 12:50-14:20)

Room: Grote Zaal

Tuesday 02/07/2018 14:20-16:20

SIGMOD Research 1: Query Processing & Optimization
1 - sponsored by Tableau

(Tue 14:20-16:20)

Room: Effectenbeurszaal

Chair: Wolfgang Lehner

Exact Cardinality Query Optimization with Bounded Execution Cost

Immanuel Trummer (Cornell University)

Pessimistic Cardinality Estimation

Walter Cai (University of Washington), Magdalena Balazinska (University of Washington), Dan Suciu (University of Washington)

Efficiently Searching In-Memory Sorted Arrays: Revenge of the Interpolation Search?

Peter Van Sandt (University of Wisconsin, Madison), Yannis Chronis (University of Wisconsin, Madison), Jignesh Patel (University of Wisconsin, Madison)

Iterative Query Processing based on Unified Optimization Techniques

Kisung Park (Kyung Hee University), Hojin Seo (Kyung Hee University), Mostofa Rasel (Kyung Hee University), Young-Koo Lee (Kyung Hee University), Chanho Jeong (SAP Labs Korea), Sung

*Yeol Lee (SAP Labs Korea), Chungmin Lee (SAP Labs Korea),
Dong-Hun Lee (SAP Labs Korea)*

Approximate Distinct Counts for Billions of Datasets
Daniel Ting (Tableau Software)

Cache-oblivious High-performance Similarity Join

Martin Perdacher (University of Vienna), Claudia Plant (University of Vienna), Christian Böhm (Ludwig-Maximilians-Universität)

SIGMOD Research 2: Privacy/Blockchain

(Tue

14:20-16:20)

Room: Graanbeurszaal

Chair: Raghav Kaushik

Blurring the Lines between Blockchains and Database Systems: the Case of Hyperledger Fabric

Ankur Sharma (Saarland University), Felix Schuhknecht (Saarland University), Divya Agrawal (Saarland University), Jens Dittrich (Saarland University)

Towards Scaling Blockchain Systems via Sharding

Hung Dang (National University of Singapore), Tien Tuan Anh Dinh (National University of Singapore), Dumitrel Loghin (National University of Singapore), Ee-Chien Chang (National University of Singapore), Qian Lin (National University of Singapore), Beng Chin Ooi (National University of Singapore)

vChain: Enabling Verifiable Boolean Range Queries over Blockchain Databases

Cheng Xu (Hong Kong Baptist University), Ce Zhang (Hong Kong Baptist University), Jianliang Xu (Hong Kong Baptist University)

Answering Multi-Dimensional Analytical Queries under Local Differential Privacy

Tianhao Wang (Purdue University), Bolin Ding (Alibaba Group), Jingren Zhou (Alibaba Group), Cheng Hong (Alibaba Group), Zhicong Huang (Alibaba Group), Ninghui Li (Purdue University), Somesh Jha (University of Wisconsin, Madison)

APEx: Accuracy-Aware Differentially Private Data Exploration

Chang Ge (University of Waterloo), Xi He (University of Waterloo), Ihab Ilyas (University of Waterloo), Ashwin Machanavajjhala (Duke University)

Active Sparse Mobile Crowd Sensing Based on Matrix Completion

Kun Xie (Hunan University), Xiaocan Li (Hunan University), Xin Wang (Stony Brook University), Gaogang Xie (Institute of Computing Technology & Chinese Academy of Sciences), Jigang Wen (Institute of Computing Technology & Chinese Academy of Sciences), Dafang Zhang (Hunan University)

SIGMOD Research 3: Information Extraction (Tue
14:20-16:20)

Room: Administratiezaal

Chair: Guoliang Li

Autocompletion for Prefix-Abbreviated Input

Sheng Hu (Nagoya University & Kyoto University), Chuan Xiao (Nagoya University & Osaka University), Jianbin Qin (Shenzhen University), Yoshiharu Ishikawa (Nagoya University), Qiang Ma (Kyoto University)

Progressive Deep Web Crawling Through Keyword Queries For Data Enrichment

Pei Wang (Simon Fraser University), Ryan Shea (Simon Fraser University), Jiannan Wang (Simon Fraser University), Eugene Wu (Columbia University)

Visual Segmentation for Information Extraction from Heterogeneous Visually Rich Documents

Ritesh Sarkhel (Ohio State University), Arnab Nandi (Ohio State University)

RRR: Rank-Regret Representative

Abolfazl Asudeh (University of Michigan), Azade Nazi (Google AI), Nan Zhang (Pennsylvania State University), Gautam Das (University of Texas at Arlington), H. V. Jagadish (University of Michigan)

Strongly Truthful Interactive Regret Minimization

Min Xie (Hong Kong University of Science and Technology), Raymond Chi-Wing Wong (Hong Kong University of Science and Technology), Ashwin Lall (Denison University)

Verifying Text Summaries of Relational Data Sets

Saehan Jo (Cornell University), Immanuel Trummer (Cornell University), Weicheng Yu (Cornell University), Xuezhi Wang (Google Research), Cong Yu (Google Research), Daniel Liu (Cornell University), Niyati Mehta (Cornell University)

SIGMOD Industry 1: Data Applications (Tue 14:20-16:20)

Room: Berlage Zaal

Chair: Marco Serafini

QuickInsights: Quick and Automatic Discovery of Insights from Multi-Dimensional Data

Rui Ding (Microsoft Research), Shi Han (Microsoft Research), Yong Xu (Microsoft Research), Haidong Zhang (Microsoft Research), Dongmei Zhang (Microsoft Research)

ExplainIt! – A Declarative Root-cause Analysis Engine for Time Series Data

Vimalkumar Jeyakumar (Cisco Tetration Analytics), Omid Madani

(Cisco Tetration Analytics), Ali Parandeh (Cisco Tetration Analytics), Ashutosh Kulshreshtha (Cisco Tetration Analytics), Weifei Zeng (Cisco Tetration Analytics), Navindra Yadav (Cisco Tetration Analytics)

Automatically Generating Interesting Facts from Wikipedia Tables

Flip Korn (Google Research), Xuezhi Wang (Google Research), You Wu (Google Research), Cong Yu (Google Research)

Snorkel DryBell: A Case Study in Deploying Weak Supervision at Industrial Scale

Stephen Bach (Brown University), Daniel Rodriguez (Google), Yintao Liu (Google), Chong Luo (Google), Haidong Shao (Google), Cassandra Xia (Google), Souvik Sen (Google), Alex Ratner (Stanford University), Braden Hancock (Stanford University), Houman Alborzi (Google), Rahul Kuchhal (Google), Chris Ré (Stanford University), Rob Malkin (Google)

PS2: Parameter Server on Spark

Zhipeng Zhang (Peking University & Tencent Inc.), Bin Cui (Peking University), Yingxia Shao (Beijing University of Posts and Telecommunications), Lele Yu (Tencent Inc.), Jiawei Jiang (Tencent Inc.), Xupeng Miao (Peking University & Tencent Inc.)

Entity Matching Meets Data Science: A Progress Report from the Magellan Project

Yash Govind (University of Wisconsin, Madison), Pradap Konda (University of Wisconsin, Madison), Paul Suganthan G.C. (Google), Philip Martinkus (University of Wisconsin, Madison), Palaniappan Nagarajan (University of Wisconsin, Madison), Aravind Soundararajan (University of Wisconsin, Madison), Han Li (University of Wisconsin, Madison), Sidharth Mudgal (University of Wisconsin, Madison), Jeff Ballard (University of Wisconsin, Madison), Haojun Zhang (University of Wisconsin, Madison),

Adel Ardalan (University of Wisconsin, Madison), Sanjib Das (University of Wisconsin, Madison), Derek Paulsen (University of Wisconsin, Madison), Amanpreet Singh Saini (University of Wisconsin, Madison), Erik Paulson (University of Wisconsin, Madison), Youngchoon Park (Johnson Controls), Marshall Carter (American Family Insurance), Mingju Sun (American Family Insurance), Glenn Fung (American Family Insurance), AnHai Doan (University of Wisconsin, Madison)

PODS Invited Tutorial 1

(Tue 14:20-16:20)

Room: Veilingzaal

Chair: Pierre Bourhis

Making Consistency Protocols Serializable

Alan Fekete (University of Sydney)

Tuesday 02/07/2018 16:20-17:50

Poster & Demo Groups A and B

(Tue 16:20-17:50)

Room: Grote Zaal

One poster for each SIGMOD and PODS paper presented on Tuesday. Plus 5 Programming Contest demos.

Representations and Optimizations for Embedded Parallel Dataflow Languages

Alexander Alexandrov (TU Berlin), Georgi Krastev (TU Berlin), Volker Markl (TU Berlin)

A Survey of Spatial Crowdsourcing

Srinivasa Raghavendra (Aalborg University), Bhuvan Gummidi (Aalborg University), Xike Xie (University of Science and Technology of China), Torben Bach Pedersen (Aalborg University)

K-Regret Queries Using Multiplicative Utility Functions

Jianzhong Qi (The University of Melbourne), Fei Zuo (The University of Melbourne), Hanan Samet (University of Maryland), Jia Cheng Yao (The University of Melbourne)

Historic Moments Discovery in Sequence Data.

Ran Bai (The Hong Kong Polytechnic University), Wing-Kai Hon (National Tsing Hua University, Taiwan), Eric Lo (Chinese University of Hong Kong), Zhian He (University of Hong Kong), Kenny Q. Zhu (Shanghai Jiao Tong University)

FindYourFavorite: An Interactive System for Finding the User’s Favorite Tuple in the Database

Min Xie (Hong Kong University of Science and Technology), Tianwen Chen (Hong Kong University of Science and Technology), Raymond Chi-Wing Wong (Hong Kong University of Science and Technology)

Large Scale Graph Mining with G-Miner

Hongzhi Chen (The Chinese University of Hong Kong), Xiaoxi Wang (The Chinese University of Hong Kong), Chenghuan Huang (The Chinese University of Hong Kong), Juncheng Fang (The Chinese University of Hong Kong), Yifan Hou (The Chinese University of Hong Kong), Changji Li (The Chinese University of Hong Kong), James Cheng (The Chinese University of Hong Kong)

ANMAT: Automatic Knowledge Discovery and Error Detection through Pattern Functional Dependencies

Abdulhakim Qahtan (QCRI, HBKU), Nan Tang (QCRI, HBKU), Mourad Ouzzani (QCRI, HBKU), Yang Cao (University of Edinburgh), Michael Stonebraker (MIT)

Estimating Cardinalities with Deep Sketches

Andreas Kipf (Technische Universität München), Dimitri Vorona (Technische Universität München), Jonas Müller (Technische Universität München), Thomas Kipf (University of Amsterdam), Bernhard Radke (Technische Universität München), Viktor Leis (Technische Universität München), Peter Boncz (CWI), Thomas Neumann (Technische Universität München), Alfons Kemper (Technische Universität München)

Unit Testing Data with DeeQu

Sebastian Schelter (Amazon Research), Felix Biessmann (Amazon Research), Dustin Lange (Amazon Research), Tammo Rukat (Amazon Research), Phillip Schmidt (Amazon Research), Stephan Seufert (Amazon Research), Pierre Brunelle (Amazon Research), Andrey Taptunov (Amazon Research)

DuckDB: an Embeddable Analytical Database

Mark Raasveldt (CWI), Hannes Mühleisen (CWI)

CLASH: A High-Level Abstraction for Optimized, Multi-Way Stream Joins over Apache Storm

Manuel Dossinger (TU Kaiserslautern), Sebastian Michel (TU Kaiserslautern), Constantin Roudsarabi (TU Kaiserslautern)

PgCuckoo: Laying Plan Eggs in PostgreSQL’s Nest

Denis Hirn (Universität Tübingen), Torsten Grust (Universität Tübingen)

Demonstration of ModelarDB: Model-Based Management of Dimensional Time Series

Søren Kejser Jensen (Aalborg University), Torben Bach Pedersen (Aalborg University), Christian Thomsen (Aalborg University)

NEURON: Query Execution Plan Meets Natural Language Processing For Augmenting DB Education

Siyuan Liu (Nanyang Technological University), Sourav Bhowmick

(Nanyang Technological University), Wanlu Zhang (Nanyang Technological University), Shu Wang (Nanyang Technological University), Wanyi Huang (Nanyang Technological University), Shafiq Joty (Nanyang Technological University)

PIClean: A Probabilistic and Interactive Data Cleaning System

Zhuoran Yu (Georgia Institute of Technology), Xu Chu (Georgia Institute of Technology)

Apollo: A Dataset Profiling and Operator Modeling System

Tasos Bakogiannis (National Technical University of Athens), Ioannis Giannakopoulos (National Technical University of Athens), Dimitrios Tsoumakos (Ionian University), Nectarios Koziris (National Technical University of Athens)

Pivotal Greenplum© for Kubernetes: Demonstration of Managing Greenplum Database on Kubernetes

Jemish Patel (Pivotal Software Inc), Goutam Tadi (Pivotal Software Inc), Oz Basarir (Pivotal Software Inc), Lawrence Hamel (Pivotal Software Inc), David Sharp (Pivotal Software Inc), Fei Yang (Pivotal Software Inc), Xin Zhang (Pivotal Software Inc)

Demonstration of SpeakQL: Speech-driven Multi-modal Querying of Structured Data

Vraj Shah (University of California, San Diego), Side Li (University of California, San Diego), Kevin Yang (University of California, San Diego), Arun Kumar (University of California, San Diego), Lawrence Saul (University of California, San Diego)

Ratel: Interactive Analytics for Large Scale Trajectories

Haoda Li (Tsinghua University), Guoliang Li (Tsinghua University)

sity), Jiayang Liu (Tsinghua University), Haitao Yuan (Tsinghua University), Haiquan Wang (Tsinghua University)

MigCast: Putting a Price Tag on Data Model Evolution in NoSQL Data Stores

Andrea Hillenbrand (Darmstadt University of Applied Sciences), Maksym Levchenko (Darmstadt University of Applied Sciences), Uta Störl (Darmstadt University of Applied Sciences), Stefanie Scherzinger (OTH Regensburg), Meike Klettke (University of Rostock)

NeMeSys - A Showcase of Data Oriented Near Memory Graph Processing

Alexander Krause (Technische Universität Dresden), Thomas Kissinger (Technische Universität Dresden), Dirk Habich (Technische Universität Dresden), Wolfgang Lehner (Technische Universität Dresden)

Low-latency Spark Queries on Updatable Data

Alexandru Uta (Vrije Universiteit Amsterdam), Bogdan Ghit (Databricks), Ankur Dave (University of California, Berkeley), Peter Boncz (CWI)

Demonstration of Nimbus: Model-based Pricing for Machine Learning in a Data Marketplace

Lingjiao Chen (University of Wisconsin, Madison), Hongyi Wang (University of Wisconsin, Madison), Leshang Chen (University of Pennsylvania), Paraschos Koutris (University of Wisconsin, Madison), Arun Kumar (University of California, San Diego)

Capturing and Querying Structural Provenance in Spark with Pebble

Ralf Diestelkämper (Universität Stuttgart), Melanie Herschel (Universität Stuttgart)

SVQ: Streaming Video Queries

Ioannis Xarchakos (University of Toronto), Nick Koudas (University of Toronto)

GraphWrangler: An Interactive Graph View on Relational Data

Nafisa Anzum (University of Waterloo), Semih Salihoglu (University of Waterloo), Daniel Vogel (University of Waterloo)

Coconut Palm: Static and Streaming Data Series Exploration Now in your Palm

Haridimos Kondylakis (FORTH-ICS), Niv Dayan (Harvard University), Kostas Zoumpatianos (Harvard University), Themis Palpanas (Paris Descartes University)

Natural Language Querying of Complex Business Intelligence Queries

Jaydeep Sen (IBM Research AI), Fatma Ozcan (IBM Research AI), Abdul Quamar (IBM Research AI), Greg Stager (IBM Canada), Ashish Mittal (IBM Research AI), Manasa Jammi (IBM Research AI), Chuan Lei (IBM Research AI), Diptikalyan Saha (IBM Research AI), Karthik Sankaranarayanan (IBM Research AI)

Tuesday 02/07/2018 17:50-19:50

New Researcher Symposium

(Tue 17:50-19:50)

Room: Effectenbeurszaal

Student Research Competition

(Tue 17:50-19:50)

Room: Graanbeurszaal

SpeakQL: Towards Speech-driven Multimodal Querying

Vraj Shah (University of California, San Diego)

Fingerprints for Compressed Columnar Data Search

Carmen Kwan (University of Waterloo)

CAvSAT: A System for Query Answering over Inconsistent Databases

Akhil Dixit (University of California, Santa Cruz)

Scalable Reservoir Sampling on Many-Core CPUs

Altan Birler (Technische Universität München)

LSM-Trees and B-Trees: The Best of Both Worlds

Varun Jain (Harvard University), James Lennon (Harvard University), Harshita Gupta (Harvard University)

Generating Selective Filters for Access Method and PhysicalDesign Evaluation

Pranav Subramaniam (University of Chicago)

Interactive Visualization For Big Spatial Data

Saheli Ghosh (University of California, Riverside)

Learning to Generate Questions with Adaptive Copying Neural Networks

Xinyuan Lu (Carleton University)

Query-Driven Learning for Next Generation Predictive Modeling & Analytics

Fotis Savva (University of Glasgow)

Answering Range Queries Under Local Differential Privacy

Tejas Kulkarni (University of Warwick)

Helios: An Adaptive and Query Workload-driven Partitioning Framework for Distributed Graph Stores

Ali Davoudian (Carleton University)

Deep Query Optimization

Tin Vu (University of California, Riverside)

Bootstrapping an End-to-End Natural Language Interface for Databases

Nathaniel Weir (Brown University), Prasetya Utama (TU Darmstadt)

Recommending Deployment Strategies in Crowd-sourcing Platforms

Dong Wei (New Jersey Institute of Technology)

Towards Understanding Data Analysis Workflows using a Large Notebook Corpus

Mohammed Suhail Rehman (University of Chicago)

Arachnid: Generalized Visual Data Cleaning

Conder Shou (Columbia University), Amita Shukla (Columbia University)

PODS 5: Semistructured Data and Knowledge Graphs, Logic, and Verification
(Tue 17:50-19:50)

Room: Veilingzaal

Chair: Reinhard Pichler

The Space-Efficient Core of Vadalog

Gerald Berger (TU Wien), Georg Gottlob (University of Oxford & TU Wien), Andreas Pieris (University of Edinburgh), Emanuel Sallinger (University of Oxford & TU Wien)

Decidable XPath Fragments in the Real World

David Baelde (ENS Paris-Saclay & CNRS, Université Paris-Saclay), Anthony Lick (ENS Paris-Saclay & CNRS, Université Paris-Saclay), Sylvain Schmitz (ENS Paris-Saclay & CNRS, Université Paris-Saclay)

Containment of Shape Expression Schemas for RDF

Slawek Staworko (CNRS & University of Lille), Piotr Wieczorek (University of Wroclaw)

Complexity Bounds for Relational Algebra over Document Spanners

Liat Peterfreund (Technion), Dominik Freydenberger (Loughborough University), Benny Kimelfeld (Technion), Markus Kröll (Vienna University of Technology)

Reachability in Database-driven Systems with Numerical Attributes under Recency Bounding

Parosh Aziz Abdulla (Uppsala University), C. Aiswarya (Chennai Mathematical Institute), Mohamed Faouzi Atig (Uppsala University), Marco Montali (KRDB Research Centre, Free University of Bozen-Bolzano)

Compiling Existential Positive Queries to Bounded-Variable Fragments

Christoph Berkholz (Humboldt-Universität zu Berlin), Hubie Chen (Birkbeck, University of London)

Tuesday 02/07/2018 20:30-23:00

SIGMOD Reception - sponsored by MonetDB

(Tue

20:30-23:00)

Room: Van Gogh Museum

Wednesday 03/07/2018 08:00-08:30

Coffee + Light Breakfast

(Wed 08:00-08:30)

Room: Grote Zaal

Wednesday 03/07/2018 08:30-10:00

SIGMOD Keynote

(Wed 08:30-10:00)

Room: Effectenbeurszaal

Chair: Stefan Manegold

State of Public and Private Blockchains: Myths and Reality

C. Mohan (IBM Almaden Research Center)

Wednesday 03/07/2018 10:00-11:00

Teaser Talks for all Wednesday SIGMOD Research and Industrial Papers
(Wed 10:00-11:00)

Room: Effectenbeurszaal

Chair: Stefan Manegold

PODS 6: Containment and Homomorphisms (Wed 10:00-11:00)

Room: Veilingzaal

Chair: Dan Olteanu

Testability of Homomorphism Inadmissibility: Property Testing Meets Database Theory

Hubie Chen (Birkbeck, University of London), Yuichi Yoshida (National Institute of Informatics)

The Selfish Models Property: Bounding the Complexity of Query Containment and Entailment Problems

Hubie Chen (Birkbeck, University of London)

Attacking Diophantus: Solving a Special Case of Bag Containment

George Konstantinidis (University of Southampton), Fabio Mogaero (Università degli Studi di Napoli Federico II)

Wednesday 03/07/2018 11:00-11:30

Coffee

(Wed 11:00-11:30)

Room: Grote Zaal

Wednesday 03/07/2018 11:30-12:50

SIGMOD Research 4: Distributed Data Management
(Wed 11:30-12:50)

Room: Effectenbeurszaal

Chair: Holger Pirk

An End-to-End Automatic Cloud Database Tuning System Using Deep Reinforcement Learning

Ji Zhang (Huazhong University of Science and Technology), Yu Liu (Huazhong University of Science and Technology), Ke Zhou (Huazhong University of Science and Technology), Guoliang Li (Tsinghua University), Zhili Xiao (Tencent Inc.), Bin Cheng (Tencent Inc.), Jiashu Xing (Tencent Inc.), Yangtao Wang (Huazhong University of Science and Technology), Tianheng Cheng (Huazhong University of Science and Technology), Li Liu (Huazhong University of Science and Technology), Minwei Ran (Huazhong University of Science and Technology), Zekang Li (Huazhong University of Science and Technology)

Fast General Distributed Transactions with Opacity

Alex Shamis (Microsoft Research), Matthew Renzelmann (Microsoft), Stanko Novakovic (VMware), Georgios Chatzopoulos (EPFL), Aleksandar Dragojević (Microsoft Research), Dushyanth Narayanan (Microsoft Research), Miguel Castro (Microsoft Research)

The Log-Structured Merge-Bush & the Wacky Continuum

Niv Dayan (Harvard University), Stratos Idreos (Harvard University)

RaSQL: Greater Power and Performance for Big

Data Analytics with Recursive-aggregate-SQL on Spark

Jiaqi Gu (University of California, Los Angeles), Yugo Watanabe (University of California, Los Angeles), William Mazza (University of Naples Federico II), Alexander Shkapsky (Workday, Inc.), Mohan Yang (Google), Ling Ding (University of California, Los Angeles), Carlo Zaniolo (University of California, Los Angeles)

SIGMOD Research 5: Provenance (Wed 11:30-12:50)

Room: Graanbeurszaal

Chair: Alexandra Meliou

Going Beyond Provenance: Explaining Query Answers with Pattern-based Counterbalances

Zhengjie Miao (Duke University), Qitian Zeng (Illinois Institute of Technology), Boris Glavic (Illinois Institute of Technology), Sudeepa Roy (Duke University)

Explaining Wrong Queries Using Small Examples

Zhengjie Miao (Duke University), Sudeepa Roy (Duke University), Jun Yang (Duke University)

Ariadne: Online Provenance for Big Graph Analytics

Vicky Papavasileiou (University of California, San Diego), Ken Yocum (Intuit, Inc. & University of California, San Diego), Alin Deutsch (University of California, San Diego)

Hypothetical Reasoning via Provenance Abstraction

Daniel Deutch (Tel Aviv University), Yuval Moskovitch (Tel Aviv University), Noam Rinetzky (Tel Aviv University)

SIGMOD Research 6: Streams (Wed 11:30-12:50)

Room: Administratiezaal

Chair: Jonathan Goldstein

Event Trend Aggregation Under Rich Event Matching Semantics

Olga Poppe (Microsoft Gray Systems Lab), Chuan Lei (IBM Almaden Research Center), Elke Rundensteiner (Worcester Polytechnic Institute), David Maier (Portland State University)

Elasticutor: Rapid Elasticity for Realtime Stateful Stream Processing

Li Wang (Yitu Technology), Tom Z. J. Fu (Advanced Digital Sciences Center), Richard T. B. Ma (National University of Singapore), Marianne Winslett (University of Illinois Urbana-Champaign), Zhenjie Zhang (Yitu Technology)

Real-Time Multi-Pattern Detection over Event Streams

Ilya Kolchinsky (Technion), Assaf Schuster (Technion)

ASstream: Ad-hoc Shared Stream Processing

Jeyhun Karimov (DFKI GmbH), Tilmann Rabl (DFKI GmbH & TU Berlin), Volker Markl (DFKI GmbH & TU Berlin)

SIGMOD Industry 2: Storage and Indexing

(Wed

11:30-12:50)

Room: Berlage Zaal

Chair: Alexander Shraer

Nanosecond Indexing of Graph Data With Hash Maps and VLists

Andrew Carter (LinkedIn Corporation), Andrew Rodriguez (LinkedIn Corporation), Yiming Yang (LinkedIn Corporation), Scott Meyer (LinkedIn Corporation)

Implementation of Cluster-wide Logical Clock and Causal Consistency in MongoDB

Misha Tyulenev (MongoDB, Inc), Andy Schwerin (MongoDB,

Inc), Asya Kamsky (MongoDB, Inc), Randolph Tan (MongoDB, Inc), Alyson Cabral (MongoDB, Inc), Jack Mulrow (MongoDB, Inc)

X-Engine: An Optimized Storage Engine for Large-scale E-commerce Transaction Processing

Gui Huang (Alibaba Group), Xuntao Cheng (Alibaba Group), Jianying Wang (Alibaba Group), Yufie Wang (Alibaba Group), Dengcheng He (Alibaba Group), Tieying Zhang (Alibaba Group), Feifei Li (Alibaba Group), Sheng Wang (Alibaba Group), Wei Cao (Alibaba Group), Qiang Li (Alibaba Group)

Automatically Indexing Millions of Databases in Microsoft Azure SQL Database

Sudipto Das (Microsoft), Miroslav Grbic (Microsoft), Igor Ilic (Microsoft), Isidora Jovandic (Microsoft), Andrija Jovanovic (Microsoft), Vivek Narasayya (Microsoft), Miodrag Radulovic (Microsoft), Maja Stikic (Microsoft), Gaoxiang Xu (Microsoft), Surajit Chaudhuri (Microsoft)

PODS 7: Joins, hypergraphs, and Aggregate Queries

(Wed 11:30-12:50)

Room: Veilingzaal

Chair: Hubie Chen

On Functional Aggregate Queries with Additive Inequalities

Mahmoud Abo Khamis (RelationalAI), Ryan Curtin (RelationalAI), Benjamin Moseley (Carnegie Mellon University), Hung Ngo (RelationalAI), XuanLong Nguyen (University of Michigan), Dan Olteanu (University of Oxford), Maximilian Schleich (University of Oxford)

Topology Dependent Bounds For FAQs

Michael Langberg (University at Buffalo), Shi Li (University at

*Buffalo), Sai Vikneshwar Mani Jayaraman (University at Buffalo),
Atri Rudra (University at Buffalo)*

Instance and Output Optimal Parallel Algorithms for Acyclic Joins

*Xiao Hu (Hong Kong University of Science and Technology), Ke
Yi (Hong Kong University of Science and Technology)*

HyperBench: A Benchmark and Tool for Hyper- graphs and Empirical Findings

*Wolfgang Fischl (Vienna University of Technology), Georg Gottlob
(University of Oxford), Davide Mario Longo (Vienna University of
Technology), Reinhard Pichler (Vienna University of Technology)*

Wednesday 03/07/2018 12:50-14:20

Lunch + SIGMOD Business Meeting

(Wed 12:50-14:20)

Room: Grote Zaal

Wednesday 03/07/2018 14:20-16:20

SIGMOD Research 7: Modern Hardware (Wed 14:20-16:20)

Room: Effectenbeurszaal

Chair: Justin Levandoski

Concurrent Prefix Recovery: Performing CPR on a Database

*Guna Prasaad (University of Washington), Badrish Chandramouli
(Microsoft Research), Donald Kossmann (Microsoft Research)*

BriskStream: Scaling Data Stream Processing on Shared-Memory Multicore Architectures

*Shuhao Zhang (National University of Singapore), Jiong He (Advanced
Digital Sciences Center), Amelie Zhou (Shenzhen University),
Bingsheng He (National University of Singapore)*

Border-Collie: A Wait-free, Read-optimal Algorithm for Database Logging on Multicore Hardware

Jongbin Kim (Hanyang University), Hyeongwon Jang (Hanyang University), Seohui Son (Hanyang University), Hyuck Han (Dongduk Women's University), Sooyong Kang (Hanyang University), Hyungsoo Jung (Hanyang University)

Designing Distributed Tree-based Index Structures for Fast RDMA-capable Networks

Tobias Ziegler (TU Darmstadt), Sumukha Tumkur Vani (Brown University), Carsten Binnig (TU Darmstadt), Rodrigo Fonseca (Brown University), Tim Kraska (MIT)

DistME: A Fast and Elastic Distributed Matrix Computation Engine using GPUs

Donghyoung Han (Daegu Gyeongbuk Institute of Science & Technology (DGIST)), Yoon-Min Nam (Daegu Gyeongbuk Institute of Science & Technology (DGIST)), Jihye Lee (Daegu Gyeongbuk Institute of Science & Technology (DGIST)), Kyongseok Park (Korea Institute of Science and Technology Information (KISTI)), Hyunwoo Kim (Korea Institute of Science and Technology Information (KISTI)), Min-Soo Kim (Daegu Gyeongbuk Institute of Science & Technology (DGIST))

GPU-based Graph Traversal on Compressed Graphs

Mo Sha (National University of Singapore), Yuchen Li (Singapore Management University), Kian-Lee Tan (National University of Singapore)

SIGMOD Research 8: Data Integration/Cleaning (Wed 14:20-16:20)

Room: Graanbeurszaal

Chair: Paolo Papotti

Interventional Fairness : Causal Database Repair for

Algorithmic Fairness

Babak Salimi (University of Washington), Luke Rodriguez (University of Washington), Bill Howe (University of Washington), Dan Suciu (University of Washington)

Uni-Detect: A Unified Approach to Automated Error Detection in Tables

Pei Wang (Simon Fraser University), Yeye He (Microsoft Research)

HoloDetect: Few-Shot Learning for Error Detection

Alireza Heidari (University of Waterloo), Joshua McGrath (University of Wisconsin, Madison), Ihab Ilyas (University of Waterloo), Theodoros Rekatsinas (University of Wisconsin, Madison)

JOSIE: Overlap Set Similarity Search for Finding Joinable Tables in Data Lakes

Erkang Zhu (University of Toronto), Dong Deng (Inception Institute of Artificial Intelligence), Fatemeh Nargesian (University of Toronto), Renée Miller (Northeastern University)

Raha: A Configuration-Free Error Detection System

Mohammad Mahdavi (TU Berlin), Ziawasch Abedjan (TU Berlin), Raul Castro Fernandez (MIT), Samuel Madden (MIT), Mourad Ouzzani (QCRI, HBKU), Michael Stonebraker (MIT), Nan Tang (QCRI, HBKU)

Speculative Distributed CSV Data Parsing for Big Data Analytics

Chang Ge (University of Waterloo), Yinan Li (Microsoft Research), Eric Eilebrecht (Microsoft Research), Badrish Chandramouli (Microsoft Research), Donald Kossmann (Microsoft Research)

Room: Administratiezaal

Chair: Jun Yang

CATAPULT: Data-driven Selection of Canned Patterns for Efficient Visual Graph Query Formulation

Kai Huang (Fudan University), Huey Chua (Nanyang Technological University), Sourav Bhowmick (Nanyang Technological University), Byron Choi (Hong Kong Baptist University), Shuigeng Zhou (Fudan University)

iQCAR: inter-Query Contention Analyzer for Data Analytics Frameworks

Prajakta Kalmegh (Duke University), Shivnath Babu (Unravel Data Systems), Sudeepa Roy (Duke University)

A Holistic Approach for Query Evaluation and Result Vocalization in Voice-Based OLAP

Immanuel Trummer (Cornell University), Yicheng Wang (Cornell University), Saketh Mahankali (Cornell University)

Top-k Queries over Digital Traces

Yifan Li (York University), Xiaohui Yu (York University), Nick Koudas (University of Toronto)

Visual Road: A Video Data Management Benchmark

Brandon Haynes (University of Washington), Amrita Mazumdar (University of Washington), Magdalena Balazinska (University of Washington), Luis Ceze (University of Washington), Alvin Cheung (University of Washington)

Mining Precision Interfaces From Query Logs

Qianrui Zhang (Tsinghua University), Haoci Zhang (Columbia

University), Thibault Sellam (Columbia University), Eugene Wu (Columbia University)

SIGMOD Research 10: Graphs 1

(Wed 14:20-16:20)

Room: Berlage Zaal

Chair: Angela Bonifati

Distance-generalized Core Decomposition

Francesco Bonchi (ISI Foundation & Eurecat), Arijit Khan (Nanyang Technological University), Lorenzo Severini (ISI Foundation)

Unboundedness and Efficiency of Truss Maintenance in Evolving Graphs

Yikai Zhang (Chinese University of Hong Kong), Jeffrey Yu (Chinese University of Hong Kong)

PRSim: Sublinear Time SimRank Computation on Large Power-Law Graphs

Zhewei Wei (Renmin University of China), Xiaodong He (4Paradigm Inc.), Xiaokui Xiao (National University of Singapore), Sibo Wang (The Chinese University of Hong Kong), Yu Liu (Peking University), Xiaoyong Du (Renmin University of China), Ji-Rong Wen (Renmin University of China)

Scaling Distance Labeling on Small-World Networks

Wentao Li (University of Technology Sydney), Miao Qiao (University of Auckland), Lu Qin (University of Technology Sydney), Ying Zhang (University of Technology Sydney), Lijun Chang (University of Sydney), Xuemin Lin (University of New South Wales)

Maximizing Welfare in Social Networks under A Utility Driven Influence Diffusion model

Prithu Banerjee (University of British Columbia), Wei Chen (Microsoft Research), Laks Lakshmanan (University of British

Columbia)

Efficient Approximation Algorithms for Adaptive Seed Minimization

Jing Tang (National University of Singapore), Keke Huang (Nanyang Technological University), Xiaokui Xiao (National University of Singapore), Laks Lakshmanan (University of British Columbia), Xueyan Tang (Nanyang Technological University), Aixin Sun (Nanyang Technological University), Andrew Lim (National University of Singapore)

PODS Invited Tutorial 2

(Wed 14:20-16:20)

Room: Veilingzaal

Chair: Christoph Koch

Algorithmic Fairness: Measures, Methods and Representations

Suresh Venkatasubramanian (University of Utah)

Wednesday 03/07/2018 16:20-17:50

Poster & Demo Groups B and C

(Wed 16:20-17:50)

Room: Grote Zaal

One poster for each SIGMOD and PODS paper presented on Wednesday.

Pivotal Greenplum© for Kubernetes: Demonstration of Managing Greenplum Database on Kubernetes

Jemish Patel (Pivotal Software Inc), Goutam Tadi (Pivotal Software Inc), Oz Basarir (Pivotal Software Inc), Lawrence Hamel (Pivotal Software Inc), David Sharp (Pivotal Software Inc), Fei Yang (Pivotal Software Inc), Xin Zhang (Pivotal Software Inc)

Demonstration of SpeakQL: Speech-driven Multi-modal Querying of Structured Data

Vraj Shah (University of California, San Diego), Side Li (University of California, San Diego), Kevin Yang (University of California, San Diego), Arun Kumar (University of California, San Diego), Lawrence Saul (University of California, San Diego)

RateI: Interactive Analytics for Large Scale Trajectories

Haoda Li (Tsinghua University), Guoliang Li (Tsinghua University), Jiayang Liu (Tsinghua University), Haitao Yuan (Tsinghua University), Haiquan Wang (Tsinghua University)

MigCast: Putting a Price Tag on Data Model Evolution in NoSQL Data Stores

Andrea Hillenbrand (Darmstadt University of Applied Sciences), Maksym Levchenko (Darmstadt University of Applied Sciences), Uta Störl (Darmstadt University of Applied Sciences), Stefanie Scherzinger (OTH Regensburg), Meike Klettke (University of Rostock)

NeMeSys - A Showcase of Data Oriented Near Memory Graph Processing

Alexander Krause (Technische Universität Dresden), Thomas Kissinger (Technische Universität Dresden), Dirk Habich (Technische Universität Dresden), Wolfgang Lehner (Technische Universität Dresden)

Low-latency Spark Queries on Updatable Data

Alexandru Uta (Vrije Universiteit Amsterdam), Bogdan Ghit (Databricks), Ankur Dave (University of California, Berkeley), Peter Boncz (CWI)

Demonstration of Nimbus: Model-based Pricing for Machine Learning in a Data Marketplace

Lingjiao Chen (University of Wisconsin, Madison), Hongyi Wang (University of Wisconsin, Madison), Leshang Chen (University of Pennsylvania), Paraschos Koutris (University of Wisconsin, Madison), Arun Kumar (University of California, San Diego)

Capturing and Querying Structural Provenance in Spark with Pebble

Ralf Diestelkämper (Universität Stuttgart), Melanie Herschel (Universität Stuttgart)

SVQ: Streaming Video Queries

Ioannis Xarchakos (University of Toronto), Nick Koudas (University of Toronto)

GraphWrangler: An Interactive Graph View on Relational Data

Nafisa Anzum (University of Waterloo), Semih Salihoglu (University of Waterloo), Daniel Vogel (University of Waterloo)

Coconut Palm: Static and Streaming Data Series Exploration Now in your Palm

Haridimos Kondylakis (FORTH-ICS), Niv Dayan (Harvard University), Kostas Zoumpatianos (Harvard University), Themis Palpanas (Paris Descartes University)

Natural Language Querying of Complex Business Intelligence Queries

Jaydeep Sen (IBM Research AI), Fatma Ozcan (IBM Research AI), Abdul Quamar (IBM Research AI), Greg Stager (IBM Canada), Ashish Mittal (IBM Research AI), Manasa Jammi (IBM Research AI), Chuan Lei (IBM Research AI), Diptikalyan Saha (IBM Research AI), Karthik Sankaranarayanan (IBM Research AI)

Peering through the Dark: An Owl's View of Inter-job Dependencies and Jobs' Impact in Shared Clusters

Andrew Chung (Carnegie Mellon University), Carlo Curino (Microsoft), Subru Krishnan (Microsoft), Konstantinos Karanasos (Microsoft), Panagiotis Garefalakis (Imperial College London), Gregory Ganger (Carnegie Mellon University)

Visual Exploration of Time Series Anomalies with Metro-Viz

Philipp Eichmann (Brown University), Franco Solleza (Brown University), Nesime Tatbul (Intel Labs and MIT), Stan Zdonik (Brown University)

Data Debugging and Exploration with Vizier

Mike Brachmann (University at Buffalo), Carlos Bautista (New York University), Sonia Castelo (New York University), Su Feng (Illinois Institute of Technology), Juliana Freire (New York University), Boris Glavic (Illinois Institute of Technology), Oliver Kennedy (University of Buffalo), Heiko Meller (New York University), Rami Rampin (New York University), William Spoth (University at Buffalo), Ying Yang (Oracle)

CrowdGame: A Game-Based Crowdsourcing System for Cost-Effective Data Labeling

Tongyu Liu (Renmin University of China), Jingru Yang (Renmin University of China), Ju Fan (Renmin University of China), Zhewei Wei (Renmin University of China), Guoliang Li (Tsinghua University), Xiaoyong Du (Renmin University of China)

Ursprung: Provenance for Large-Scale Analytics Environments

Lukas Rupprecht (IBM Almaden Research Center), James Davis (Virginia Tech & IBM Systems), Constantine Arnold (IBM Almaden Research Center), Alexander Lubbock (Vanderbilt University), Darren Tyson (Vanderbilt University), Deepavali Bhagwat (IBM Almaden Research Center)

BlockchainDB - Towards a Shared Database on Blockchains

Muhammad El-Hindi (TU Darmstadt), Martin Heyden (TU Darmstadt), Carsten Binnig (TU Darmstadt), Ravi Ramamurthy (Microsoft Research), Arvind Arasu (Microsoft Research), Donald Kossmann (Microsoft Research)

Fluid: A Blockchain based Framework for Crowd-sourcing

Siyuan Han (Hong Kong University of Science and Technology), Zihuan Xu (Hong Kong University of Science and Technology), Yuxiang Zeng (Hong Kong University of Science and Technology), Lei Chen (Hong Kong University of Science and Technology)

MorphStore - In-Memory Query Processing based on Morphing Compressed Intermediates LIVE

Dirk Habich (Technische Universität Dresden), Patrick Damme (Technische Universität Dresden), Annett Ungethüm (Technische Universität Dresden), Johannes Pietrzyk (Technische Universität Dresden), Alexander Krause (Technische Universität Dresden), Juliana Hildebrandt (Technische Universität Dresden), Wolfgang Lehner (Technische Universität Dresden)

MapRepair: Mapping and Repairing under Policy Views

Angela Bonifati (Lyon 1 University & Liris CNRS), Ugo Comignani (Lyon 1 University & Liris CNRS), Efthymia Tsamoura (University of Oxford)

RATest: Explaining Wrong Relational Queries Using Small Examples

Zhengjie Miao (Duke University), Sudeepa Roy (Duke University), Jun Yang (Duke University)

NAVIGATE: Explainable Visual Graph Exploration

by Examples

Mohammad Hossein Namaki (Washington State University), Qi Song (Washington State University), Yinghui Wu (Washington State University)

C2Metadata: Automating the Capture of Data Transformations from Statistical Scripts in Data Documentation

Jie Song (University of Michigan), George Alter (University of Michigan), H. V. Jagadish (University of Michigan)

MithraRanking: A System for Responsible Ranking Design

Yifan Guan (University of Michigan), Abolfazl Asudeh (University of Michigan), Pranav Mayuram (University of Michigan), H. V. Jagadish (University of Michigan), Julia Stoyanovich (New York University), Jerome Miklau (University of Massachusetts Amherst), Gautam Das (University of Texas at Arlington)

NEWS: News Event Walker and Summarizer

Radityo Eko Prasojo (Free University of Bozen-Bolzano), Mouna Kacimi (Free University of Bozen-Bolzano), Werner Nutt (Free University of Bozen-Bolzano)

Cost-Effective, Workload-Adaptive Migration of Big Data Applications to the Cloud

Victor Giannakouris (Unravel Data Systems), Alejandro Fernandez (Unravel Data Systems), Alkis Simitsis (Unravel Data Systems), Shivnath Babu (Unravel Data Systems)

ChronosDB in Action: Manage, Process, and Visualize Big Geospatial Arrays in the Cloud

Ramon Antonio Rodriges Zalipynis (National Research University Higher School of Economics)

Wednesday 03/07/2018 17:50-20:30

Dinner Transfer incl. Canal Cruise

(Wed 17:50-20:30)

Room: 20 boats (Rederij Stromma)

Wednesday 03/07/2018 20:30-23:00

SIGMOD Dinner - sponsored by Facebook

(Wed

20:30-23:00)

Room: Noorderlicht Cafe

Thursday 04/07/2018 08:00-08:30

Coffee + Light Breakfast

(Thu 08:00-08:30)

Room: Grote Zaal

Thursday 04/07/2018 08:30-10:00

SIGMOD Award Talks

(Thu 08:30-10:00)

Room: Effectenbeurszaal

Chair: Anastasia Ailamaki

Data Management on Non-Volatile Memory

Joy Arulraj (Georgia Institute of Technology)

Formal Approaches to Querying Big Data in Shared-Nothing Systems

Bas Ketsman (EPFL)

Thursday 04/07/2018 10:00-11:00

Teaser Talks for all Thursday SIGMOD Research and Industrial Papers

(Thu 10:00-11:00)

Room: Effectenbeurszaal

Chair: Anastasia Ailamaki

Thursday 04/07/2018 11:00-11:30

Coffee

(Thu 11:00-11:30)

Room: Grote Zaal

Thursday 04/07/2018 11:30-12:50

SIGMOD Research 11: Systems & Machine Learning

(Thu 11:30-12:50)

Room: Effectenbeurszaal

Chair: Matthias Boehm

DeepBase: Deep Inspection of Neural Networks

Thibault Sellam (Columbia University), Kevin Lin (Columbia University), Ian Huang (Columbia University), Michelle Yang (University of California, Berkeley), Carl Vondrick (Columbia University), Eugene Wu (Columbia University)

BlinkML: Efficient Maximum Likelihood Estimation with Probabilistic Guarantees

Yongjoo Park (University of Michigan), Jingyi Qing (University of Michigan), Xiaoyang Shen (University of Michigan), Barzan Mozafari (University of Michigan)

SkinnerDB: Regret-Bounded Query Evaluation via Reinforcement Learning

Immanuel Trummer (Cornell University), Junxiong Wang (Cornell University), Deepak Maram (Cornell University), Samuel Moseley (Cornell University), Saehan Jo (Cornell University), Joseph Antonakakis (Cornell University)

Democratizing Data Science through Interactive Curation of ML Pipelines

Zeyuan Shang (MIT), Emanuel Zgraggen (MIT), Benedetto Burratti (Brown University), Ferdinand Kossmann (MIT), Philipp

Eichmann (Brown University), Yeounoh Chung (Brown University), Carsten Binnig (Brown University & TU Darmstadt), Eli Upfal (Brown University), Tim Kraska (MIT)

SIGMOD Research 12: Indexing

(Thu 11:30-12:50)

Room: Graanbeurszaal

Chair: Stratos Idreos

FITing-Tree: A Data-aware Index Structure

Alex Galakatos (Brown University), Michael Markovitch (Brown University), Carsten Binnig (TU Darmstadt), Rodrigo Fonseca (Brown University), Tim Kraska (MIT)

Hyperion: Building the Largest In-memory Search Tree

Markus Mäsker (Johannes Gutenberg University Mainz), Tim Süß (University of Applied Science Fulda), Lars Nagel (Loughborough University), Lingfang Zeng (Huazhong University of Science and Technology), André Brinkmann (Johannes Gutenberg University Mainz)

Designing Succinct Secondary Indexing Mechanism by Exploiting Column Correlations

Yingjun Wu (IBM Almaden Research Center), Jia Yu (Arizona State University), Yuanyuan Tian (IBM Almaden Research Center), Richard Sidle (IBM), Ronald Barber (IBM Almaden Research Center)

AI Meets AI: Leveraging Query Executions to Improve Index Recommendations

Bailu Ding (Microsoft Research), Sudipto Das (Microsoft Research), Ryan Marcus (Brandeis University), Wentao Wu (Microsoft Research), Surajit Chaudhuri (Microsoft Research), Vivek Narasayya (Microsoft Research)

11:30-12:50)

Room: Administratiezaal

Chair: Ke Yi

Designing Fair Ranking Schemes

Abolfazl Asudeh (University of Michigan), H. V. Jagadish (University of Michigan), Julia Stoyanovich (New York University), Gautam Das (University of Texas at Arlington)

Anti-Freeze for Large and Complex Spreadsheets: Asynchronous Formula Computation

Mangesh Bendre (University of Illinois Urbana-Champaign), Tana Wattanawaroong (University of Illinois Urbana-Champaign), Kelly Mack (University of Illinois Urbana-Champaign), Kevin Chang (University of Illinois Urbana-Champaign), Aditya Parameswaran (University of Illinois Urbana-Champaign)

Anytime Approximation in Probabilistic Databases via Scaled Dissociations

Maarten Van den Heuvel (University of Antwerp), Peter Ivanov (Northeastern University), Wolfgang Gatterbauer (Northeastern University), Floris Geerts (University of Antwerp), Martin Theobald (University of Luxembourg)

Uncertainty Annotated Databases - A Lightweight Approach for Approximating Certain Answers

Su Feng (Illinois Institute of Technology), Aaron Huber (University at Buffalo), Boris Glavic (Illinois Institute of Technology), Oliver Kennedy (University at Buffalo)

Room: Berlage Zaal

Chair: Sourav S Bhowmick

Efficient Estimation of Heat Kernel PageRank for Local Clustering

Renchi Yang (Nanyang Technological University), Xiaokui Xiao (National University of Singapore), Zhewei Wei (Renmin University of China), Sourav Bhowmick (Nanyang Technological University), Jun Zhao (Nanyang Technological University), Rong-Hua Li (Beijing Institute of Technology)

Fractal: A General-Purpose Graph Pattern Mining System

Vinicio Dias (Universidade Federal de Minas Gerais), Carlos Teixeira (Universidade Federal de Minas Gerais), Dorgival Guedes (Universidade Federal de Minas Gerais), Wagner Meira (Universidade Federal de Minas Gerais), Srinivasan Parthasarathy (Ohio State University)

Experimental Analysis of Streaming Algorithms for Graph Partitioning

Anil Pacaci (University of Waterloo), Tamer Özsu (University of Waterloo)

Interactive Graph Search

Yufei Tao (Chinese University of Hong Kong), Yuanbing Li (Tsinghua University), Guoliang Li (Tsinghua University)

Thursday 04/07/2018 12:50-14:20

Lunch

(Thu 12:50-14:20)

Room: Grote Zaal

Thursday 04/07/2018 14:20-16:20

SIGMOD Research 15: Graphs 3

(Thu 14:20-16:20)

Room: Effectenbeurszaal

Chair: Xuemin Lin

Optimizing Declarative Graph Queries at Large Scale

Qizhen Zhang (University of Pennsylvania), Akash Acharya (University of Pennsylvania), Hongzhi Chen (The Chinese University of Hong Kong), Simran Arora (University of Pennsylvania), Ang Chen (Rice University), Vincent Liu (University of Pennsylvania), Boon Loo (University of Pennsylvania)

Efficient Subgraph Matching: Harmonizing Dynamic Programming, Adaptive Matching Order, and Failing Set Together

Myoungji Han (Seoul National University), Hyunjoon Kim (Seoul National University), Geonmo Gu (Seoul National University), Kunsoo Park (Seoul National University), Wook-Shin Han (Pohang University of Science and Technology (POSTECH))

CECI: Compact Embedding Cluster Index for Scalable Subgraph Matching

Bibek Bhattacharai (George Washington University), Hang Liu (University of Massachusetts Lowell), H. Howie Huang (George Washington University)

Efficiently Answering Regular Simple Path Queries on Large Labeled Networks

Sarisht Wadhwa (IIT Delhi), Anagh Prasad (IIT Delhi), Sayan Ranu (IIT Delhi), Amitabha Bagchi (IIT Delhi), Srikanta Bedathur (IIT Delhi)

Answering Why-questions by Exemplars in Attributed Graphs

Mohammad Hossein Namaki (Washington State University), Qi Song (Washington State University), Yinghui Wu (Washington State University), Shengqi Yang (WeWork Technology)

An Efficient Index for RDF Query Containment

Theofilos Mailis (Athena Research Centre & University of Athens), Yannis Kotidis (Athens University of Economics and Business), Vaggelis Nikolopoulos (University of Athens), Evgeny Kharlamov (University of Oslo & Bosch Center for AI), Ian Horrocks (University of Oxford), Yannis Ioannidis (Athena Research Centre & University of Athens)

SIGMOD Research 16: Machine Learning (Thu 14:20-16:20)

Room: Graanbeurszaal

Chair: Theodoros Rekatsinas

Tuple-oriented Compression for Large-scale Mini-batch Stochastic Gradient Descent

Fengnan Li (University of Wisconsin, Madison), Lingjiao Chen (University of Wisconsin, Madison), Yijing Zeng (University of Wisconsin, Madison), Arun Kumar (University of California, San Diego), Xi Wu (University of Wisconsin, Madison), Jeffrey Naughton (University of Wisconsin, Madison), Jignesh Patel (University of Wisconsin, Madison)

Towards Model-based Pricing for Machine Learning in a Data Marketplace

Lingjiao Chen (University of Wisconsin, Madison), Paraschos Koutris (University of Wisconsin, Madison), Arun Kumar (University of California, San Diego)

DBEst: Revisiting Approximate Query Processing Engines with Machine Learning Models

Qingzhi Ma (University of Warwick), Peter Triantafillou (University of Warwick)

Enabling and Optimizing Non-linear Feature Interactions in Factorized Linear Algebra

Side Li (University of California, San Diego), Lingjiao Chen (University of Wisconsin, Madison), Arun Kumar (University of

California, San Diego)

Incremental and Approximate Inference for Faster Occlusion-based Deep CNN Explanations

Supun Nakandala (University of California, San Diego), Arun Kumar (University of California, San Diego), Yannis Papakonstantinou (University of California, San Diego)

MNC: Structure-Exploiting Sparsity Estimation for Matrix Expressions

Johanna Sommer (IBM Germany), Matthias Boehm (Graz University of Technology), Alexandre Eufimievski (IBM Almaden Research Center), Berthold Reinwald (IBM Almaden Research Center), Peter Haas (University of Massachusetts Amherst)

SIGMOD Research 17: Scalability

(Thu 14:20-16:20)

Room: Administratiezaal

Chair: Norman May

A Scalable Index for Top-k Subtree Similarity Queries

Daniel Kocher (University of Salzburg), Nikolaus Augsten (University of Salzburg)

A Layered Aggregate Engine for Analytics Workloads

Maximilian Schleich (University of Oxford), Dan Olteanu (University of Oxford), Mahmoud Abo Khamis (RelationalAI), Hung Ngo (RelationalAI), XuanLong Nguyen (University of Michigan)

Towards Scalable Hybrid Stores: Constraint-Based Rewriting to the Rescue

Rana Alotaibi (University of California, San Diego), Damian Bursztyn (Thales), Alin Deutsch (University of California, San Diego), Ioana Manolescu (Inria & Ecole polytechnique), Stamatis

Zampetakis (Orchestra Networks)

MIFO: A Query-Semantic Aware Resource Allocation Policy

Prajakta Kalmegh (Duke University), Shivnath Babu (Unravel Data Systems)

Dissecting the Performance of Strongly-Consistent Replication Protocols

Ailidani Aili Jiang (Microsoft), Aleksey Charapko (University at Buffalo, SUNY), Murat Demirbas (University at Buffalo, SUNY)

FishStore: Faster Ingestion with Subset Hashing

Dong Xie (University of Utah), Badrish Chandramouli (Microsoft Research), Yinan Li (Microsoft Research), Donald Kossmann (Microsoft Research)

SIGMOD Industry 3: Data Platforms (Thu 14:20-16:20)

Room: Berlage Zaal

Chair: Ying Zhang

CFS: A Distributed File System for Large Scale Container Platforms

Haifeng Liu (University of Science and Technology of China), Wei Ding (JD.com), Yuan Chen (JD.com), Weilong Guo (JD.com), Shuoran Liu (JD.com), Tianpeng Li (JD.com), Mofei Zhang (JD.com), Jianxing Zhao (JD.com), Hongyin Zhu (JD.com), Zhengyi Zhu (JD.com)

Socrates: The New SQL Server in the Cloud

Panagiotis Antonopoulos (Microsoft), Alex Budovski (Microsoft), Cristian Diaconu (Microsoft), Alejandro Hernandez (Microsoft), Jack Hu (Microsoft), Hanuma Kodavalla (Microsoft), Donald Kossmann (Microsoft Research), Umar Farooq Minhas (Microsoft Research), Naveen Prakash (Microsoft), Vijendra Purohit (Mi-

crosoft), Hugh Qu (Microsoft), Chaitanya Sreenivas Ravella (Microsoft), Krystyna Reisteter (Microsoft), Sheetal Shrotri (Microsoft), Dixin Tang (University of Chicago), Vikram Wakade (Microsoft)

One SQL to Rule Them All - an Efficient and Syntactically Idiomatic Approach to Management of Streams and Tables

Edmon Begoli (Oak Ridge National Laboratory), Tyler Akidau (Google), Fabian Hueske (Ververica), Julian Hyde (Looker Inc.), Kathryn Knight (Oak Ridge National Laboratory), Kenneth Knowles (Google)

Apache Hive: From MapReduce to Enterprise-grade Big Data Warehousing

Jesús Camacho-Rodríguez (Hortonworks), Ashutosh Chauhan (Hortonworks), Alan Gates (Hortonworks), Eugene Koifman (Hortonworks), Owen O'Malley (Hortonworks), Vineet Garg (Hortonworks), Zoltan Haindrich (Hortonworks), Sergey Shelukhin (Hortonworks), Prasanth Jayachandran (Hortonworks), Siddharth Seth (Hortonworks), Deepak Jaiswal (Hortonworks), Slim Bouguerra (Hortonworks), Nishant Bangarwa (Hortonworks), Sankar Hariappan (Hortonworks), Anishek Agarwal (Hortonworks), Jason Dere (Hortonworks), Daniel Dai (Hortonworks), Thejas Nair (Hortonworks), Nita Dembla (Hortonworks), Gopal Vijayaraghavan (Hortonworks), Günther Hagleitner (Hortonworks)

FoundationDB Record Layer: A Multi-Tenant Structured Datastore

Christos Chrysafis (Apple), Ben Collins (Apple), Scott Dugas (Apple), Jay Dunkelberger (Apple), Moussa Ehsan (Apple), Scott Gray (Apple), Alec Grieser (Apple), Ori Herrnstadt (Apple), Kfir Lev-Ari (Apple), Tao Lin (Apple), Mike McMahon (Apple), Nicholas Schiefer (Apple), Alexander Shraer (Apple)

Data Platform for Machine Learning

Pulkit Agrawal (Apple), Rajat Arya (Apple), Aanchal Bindal (Apple), Sandeep Bhatia (Apple), Anupriya Gagneja (Apple), Joseph Godlewski (Apple), Yucheng Low (Apple), Timothy Muss (Apple), Mudit Manu Paliwal (Apple), Sethu Raman (Apple), Vishruth Shah (Apple), Bochao Shen (Apple), Laura Sugden (Apple), Kaiyu Zhao (Apple), Ming-Chuan Wu (Apple)

Thursday 04/07/2018 16:20-17:50

Poster & Demo Groups A and C

(Thu 16:20-17:50)

Room: Grote Zaal

One poster for each SIGMOD paper presented on Thursday.

FindYourFavorite: An Interactive System for Finding the User's Favorite Tuple in the Database

Min Xie (Hong Kong University of Science and Technology), Tianwen Chen (Hong Kong University of Science and Technology), Raymond Chi-Wing Wong (Hong Kong University of Science and Technology)

Large Scale Graph Mining with G-Miner

Hongzhi Chen (The Chinese University of Hong Kong), Xiaoxi Wang (The Chinese University of Hong Kong), Chenghuan Huang (The Chinese University of Hong Kong), Juncheng Fang (The Chinese University of Hong Kong), Yifan Hou (The Chinese University of Hong Kong), Changji Li (The Chinese University of Hong Kong), James Cheng (The Chinese University of Hong Kong)

ANMAT: Automatic Knowledge Discovery and Error Detection through Pattern Functional Dependencies

cies

Abdulhakim Qahtan (QCRI, HBKU), Nan Tang (QCRI, HBKU), Mourad Ouzzani (QCRI, HBKU), Yang Cao (University of Edinburgh), Michael Stonebraker (MIT)

Estimating Cardinalities with Deep Sketches

Andreas Kipf (Technische Universität München), Dimitri Vorona (Technische Universität München), Jonas Müller (Technische Universität München), Thomas Kipf (University of Amsterdam), Bernhard Radke (Technische Universität München), Viktor Leis (Technische Universität München), Peter Boncz (CWI), Thomas Neumann (Technische Universität München), Alfons Kemper (Technische Universität München)

Unit Testing Data with Deequ

Sebastian Schelter (Amazon Research), Felix Biessmann (Amazon Research), Dustin Lange (Amazon Research), Tammo Rukat (Amazon Research), Phillip Schmidt (Amazon Research), Stephan Seufert (Amazon Research), Pierre Brunelle (Amazon Research), Andrey Taptunov (Amazon Research)

DuckDB: an Embeddable Analytical Database

Mark Raasveldt (CWI), Hannes Mühleisen (CWI)

CLASH: A High-Level Abstraction for Optimized, Multi-Way Stream Joins over Apache Storm

Manuel Dossinger (TU Kaiserslautern), Sebastian Michel (TU Kaiserslautern), Constantin Roudsarabi (TU Kaiserslautern)

PgCuckoo: Laying Plan Eggs in PostgreSQL’s Nest

Denis Hirn (Universität Tübingen), Torsten Grust (Universität Tübingen)

Demonstration of ModelarDB: Model-Based Management of Dimensional Time Series

Søren Kejser Jensen (Aalborg University), Torben Bach Pedersen

(Aalborg University), Christian Thomsen (Aalborg University)

NEURON: Query Execution Plan Meets Natural Language Processing For Augmenting DB Education

Siyuan Liu (Nanyang Technological University), Sourav Bhowmick (Nanyang Technological University), Wanlu Zhang (Nanyang Technological University), Shu Wang (Nanyang Technological University), Wanyi Huang (Nanyang Technological University), Shafiq Joty (Nanyang Technological University)

PIClean: A Probabilistic and Interactive Data Cleaning System

Zhuoran Yu (Georgia Institute of Technology), Xu Chu (Georgia Institute of Technology)

Apollo: A Dataset Profiling and Operator Modeling System

Tasos Bakogiannis (National Technical University of Athens), Ioannis Giannakopoulos (National Technical University of Athens), Dimitrios Tsoumakos (Ionian University), Nectarios Koziris (National Technical University of Athens)

Peering through the Dark: An Owl's View of Inter-job Dependencies and Jobs' Impact in Shared Clusters

Andrew Chung (Carnegie Mellon University), Carlo Curino (Microsoft), Subru Krishnan (Microsoft), Konstantinos Karanasos (Microsoft), Panagiotis Garefalakis (Imperial College London), Gregory Ganger (Carnegie Mellon University)

Visual Exploration of Time Series Anomalies with Metro-Viz

Philipp Eichmann (Brown University), Franco Solleza (Brown University), Nesime Tatbul (Intel Labs and MIT), Stan Zdonik (Brown University)

Data Debugging and Exploration with Vizier

Mike Brachmann (University at Buffalo), Carlos Bautista (New York University), Sonia Castelo (New York University), Su Feng (Illinois Institute of Technology), Juliana Freire (New York University), Boris Glavic (Illinois Institute of Technology), Oliver Kennedy (University of Buffalo), Heiko Meller (New York University), Ruiqi Rampin (New York University), William Spoth (University at Buffalo), Ying Yang (Oracle)

CrowdGame: A Game-Based Crowdsourcing System for Cost-Effective Data Labeling

Tongyu Liu (Renmin University of China), Jingru Yang (Renmin University of China), Ju Fan (Renmin University of China), Zhewei Wei (Renmin University of China), Guoliang Li (Tsinghua University), Xiaoyong Du (Renmin University of China)

Ursprung: Provenance for Large-Scale Analytics Environments

Lukas Rupprecht (IBM Almaden Research Center), James Davis (Virginia Tech & IBM Systems), Constantine Arnold (IBM Almaden Research Center), Alexander Lubbock (Vanderbilt University), Darren Tyson (Vanderbilt University), Deepavali Bhagwat (IBM Almaden Research Center)

BlockchainDB - Towards a Shared Database on Blockchains

Muhammad El-Hindi (TU Darmstadt), Martin Heyden (TU Darmstadt), Carsten Binnig (TU Darmstadt), Ravi Ramamurthy (Microsoft Research), Arvind Arasu (Microsoft Research), Donald Kossmann (Microsoft Research)

Fluid: A Blockchain based Framework for Crowdsourcing

Siyuan Han (Hong Kong University of Science and Technology), Zihuan Xu (Hong Kong University of Science and Technology),

*Yuxiang Zeng (Hong Kong University of Science and Technology),
Lei Chen (Hong Kong University of Science and Technology)*

**MorphStore - In-Memory Query Processing based
on Morphing Compressed Intermediates LIVE**

*Dirk Habich (Technische Universität Dresden), Patrick Damme
(Technische Universität Dresden), Annett Ungethüm (Technische
Universität Dresden), Johannes Pietrzyk (Technische Universität
Dresden), Alexander Krause (Technische Universität Dresden),
Juliana Hildebrandt (Technische Universität Dresden), Wolfgang
Lehner (Technische Universität Dresden)*

**MapRepair: Mapping and Repairing under Policy
Views**

*Angela Bonifati (Lyon 1 University & Liris CNRS), Ugo
Comignani (Lyon 1 University & Liris CNRS), Efthymia
Tsamoura (University of Oxford)*

**RATest: Explaining Wrong Relational Queries Using
Small Examples**

*Zhengjie Miao (Duke University), Sudeepa Roy (Duke University),
Jun Yang (Duke University)*

**NAVIGATE: Explainable Visual Graph Exploration
by Examples**

*Mohammad Hossein Namaki (Washington State University), Qi
Song (Washington State University), Yinghui Wu (Washington
State University)*

**C2Metadata: Automating the Capture of Data
Transformations from Statistical Scripts in Data
Documentation**

*Jie Song (University of Michigan), George Alter (University of
Michigan), H. V. Jagadish (University of Michigan)*

MithraRanking: A System for Responsible Ranking

Design

Yifan Guan (University of Michigan), Abolfazl Asudeh (University of Michigan), Pranav Mayuram (University of Michigan), H. V. Jagadish (University of Michigan), Julia Stoyanovich (New York University), Jerome Miklau (University of Massachusetts Amherst), Gautam Das (University of Texas at Arlington)

NEWS: News Event Walker and Summarizer

Radityo Eko Prasojo (Free University of Bozen-Bolzano), Mouna Kacimi (Free University of Bozen-Bolzano), Werner Nutt (Free University of Bozen-Bolzano)

Cost-Effective, Workload-Adaptive Migration of Big Data Applications to the Cloud

Victor Giannakouris (Unravel Data Systems), Alejandro Fernandez (Unravel Data Systems), Alkis Simitsis (Unravel Data Systems), Shivnath Babu (Unravel Data Systems)

ChronosDB in Action: Manage, Process, and Visualize Big Geospatial Arrays in the Cloud

Ramon Antonio Rodriges Zalipynis (National Research University Higher School of Economics)

Thursday 04/07/2018 17:30-18:00

ADS Reception 1 - sponsored by Elsevier (Thu 17:30-18:00)

Room: Effectenbeurszaal

Thursday 04/07/2018 18:00-19:30

ADS Event (Thu 18:00-19:30)

Room: Graanbeurszaal

ADS Event

Jeanne Kroeger (ADS)

Thursday 04/07/2018 19:30-20:00

ADS Reception 2 - sponsored by Elsevier (Thu 19:30-20:00)

Room: Effectenbeurszaal

Friday 07/07/2019 08:30-09:00

Coffee + Light Breakfast

(Fri 08:30-09:00)

Room: Grote Zaal

Friday 07/07/2019 09:00-10:30

Tutorial 4: part 1

(Fri 09:00-10:30)

Room: Mendes da Costa Kamer

Classical and Contemporary Approaches to Big Time Series Forecasting

Christos Faloutsos (Carnegie Mellon University & Amazon), Jan Gasthaus (AWS AI Labs), Tim Januschowski (AWS AI Labs), Yuyang Wang (AWS AI Labs)

Tutorial 6: part 1

(Fri 09:00-10:30)

Room: Effectenbeurszaal

From Auto-tuning One Size Fits All to Self-designed and Learned Data-intensive Systems

Stratos Idreos (Harvard University), Tim Kraska (MIT)

HILDA 2019: Session 1

(Fri 09:00-10:30)

Room: Berlage Zaal

HILDA 2019: the International Workshop on Human-In-the-Loop Data Analytics

Leilani Battle (University of Maryland), Surajit Chaudhuri (Microsoft), Arnab Nandi (The Ohio State University)

aiDM 2019: Session 1

(Fri 09:00-10:30)

Room: Administratiezaal

aiDM 2019: the 2nd International Workshop on Exploiting Artificial Intelligence Techniques for Data Management

Rajesh Bordawekar (IBM T. J. Watson Research Center), Oded Shmueli (Computer Science Department, Technion)

SBD 2019: Session 1

(Fri 09:00-10:30)

Room: Veilingzaal

SBD 2019: the Fourth International Workshop on Semantic Big Data

Sven Groppe (University of Lübeck), Le Gruenwald (University of Oklahoma)

Friday 07/07/2019 10:30-11:00

Coffee

(Fri 10:30-11:00)

Room: Grote Zaal

Friday 07/07/2019 11:00-12:30

Tutorial 4: part 2

(Fri 11:00-12:30)

Room: Mendes da Costa Kamer

Classical and Contemporary Approaches to Big Time Series Forecasting

Christos Faloutsos (Carnegie Mellon University & Amazon), Jan Gasthaus (AWS AI Labs), Tim Januschowski (AWS AI Labs), Yuyang Wang (AWS AI Labs)

Tutorial 6: part 2

(Fri 11:00-12:30)

Room: Effectenbeurszaal

From Auto-tuning One Size Fits All to Self-designed and Learned Data-intensive Systems

Stratos Idreos (Harvard University), Tim Kraska (MIT)

HILDA 2019: Session 2

(Fri 11:00-12:30)

Room: Berlage Zaal

HILDA 2019: the International Workshop on Human-In-the-Loop Data Analytics

Leilani Battle (University of Maryland), Surajit Chaudhuri (Microsoft), Arnab Nandi (The Ohio State University)

aiDM 2019: Session 2

(Fri 11:00-12:30)

Room: Administratiezaal

aiDM 2019: the 2nd International Workshop on Exploiting Artificial Intelligence Techniques for Data Management

Rajesh Bordawekar (IBM T. J. Watson Research Center), Oded Shmueli (Computer Science Department, Technion)

SBD 2019: Session 2

(Fri 11:00-12:30)

Room: Veilingzaal

SBD 2019: the Fourth International Workshop on Semantic Big Data

Sven Groppe (University of Lübeck), Le Gruenwald (University of Oklahoma)

LDBC Technical User Community Meeting: session 1

(Fri 11:00-12:30)

Room: Ontvangkamer

LDBC Technical User Community Meeting

Peter Boncz (*LDBC (CWI)*), Alastair Green (*LDBC (Neo4j)*)

Friday 07/07/2019 12:30-14:00

Lunch

(Fri 12:30-14:00)

Room: Grote Zaal

Friday 07/07/2019 14:00-15:30

Tutorial 5: part 1

(Fri 14:00-15:30)

Room: Mendes da Costa Kamer

Data Pipelines for User Group Analytics

Behrooz Omidvar-Tehrani (University of Grenoble Alpes), Sihem Amer-Yahia (University of Grenoble Alpes and CNRS)

Tutorial 7

(Fri 14:00-15:30)

Room: Effectenbeurszaal

Schemas and Types for JSON Data: From Theory to Practice

Mohamed-Amine Baazizi (Sorbonne Université, LIP6 UMR 7606), Dario Colazzo (Université Paris-Dauphine, PSL Research University), Giorgio Ghelli (Università di Pisa), Carlo Sartiani (Università della Basilicata)

HILDA 2019: Session 3

(Fri 14:00-15:30)

Room: Berlage Zaal

HILDA 2019: the International Workshop on Human-In-the-Loop Data Analytics

Leilani Battle (University of Maryland), Surajit Chaudhuri (Microsoft), Arnab Nandi (The Ohio State University)

Room: Administratiezaal

aiDM 2019: the 2nd International Workshop on Exploiting Artificial Intelligence Techniques for Data Management

Rajesh Bordawekar (IBM T. J. Watson Research Center), Oded Shmueli (Computer Science Department, Technion)

Room: Veilingzaal

SBD 2019: the Fourth International Workshop on Semantic Big Data

Sven Groppe (University of Lübeck), Le Gruenwald (University of Oklahoma)

Room: Ontvangkamer

LDBC Technical User Community Meeting

Peter Boncz (LDBC (CWI)), Alastair Green (LDBC (Neo4j))

Friday 07/07/2019 15:30-16:30

Room: Grote Zaal

Friday 07/07/2019 16:30-18:00

Room: Mendes da Costa Kamer

Data Pipelines for User Group Analytics

Behrooz Omidvar-Tehrani (University of Grenoble Alpes), Sihem Amer-Yahia (University of Grenoble Alpes and CNRS)

HILDA 2019: Session 4

(Fri 16:30-18:00)

Room: Berlage Zaal

HILDA 2019: the International Workshop on Human-In-the-Loop Data Analytics

Leilani Battle (University of Maryland), Surajit Chaudhuri (Microsoft), Arnab Nandi (The Ohio State University)

aiDM 2019: Session 4

(Fri 16:30-18:00)

Room: Administratiezaal

aiDM 2019: the 2nd International Workshop on Exploiting Artificial Intelligence Techniques for Data Management

Rajesh Bordawekar (IBM T. J. Watson Research Center), Oded Shmueli (Computer Science Department, Technion)

SBD 2019: Session 4

(Fri 16:30-18:00)

Room: Veilingzaal

SBD 2019: the Fourth International Workshop on Semantic Big Data

Sven Groppe (University of Lübeck), Le Gruenwald (University of Oklahoma)

LDBC Technical User Community Meeting: session 3

(Fri 16:30-18:00)

Room: Ontvangkamer

LDBC Technical User Community Meeting

Peter Boncz (LDBC (CWI)), Alastair Green (LDBC (Neo4j))

Building the systems to bring the world closer together

Our researchers and engineers are constant innovators as they design and build next generation, scalable, fast, reliable, and efficient systems.

From distributed systems, to data centers, hardware, storage, mobile and beyond, the entire Facebook platform is our lab for research, development, and innovation.

Come visit our booth for more info and learn more at research.fb.com

facebook research

Work with us to advance purposeful innovation

At Elsevier, we're combining technology and trusted information to enable giant leaps forward in science and healthcare.

Work with health and scientific data, or join the editorial team working on new Elsevier Computer Science journals like *Array*, *Internet of Things*, and *Software Impact*.

Discover career opportunities at Elsevier

<http://bit.ly/elsevierjobs>



ELSEVIER



Solve real-world
problems for
millions of users,
exabytes of data,
and **trillions** of
transactions

Join **Azure Data** and innovate where the data is

Explore further
aka.ms/buildingthefuture



Browse jobs
aka.ms/azuredatajobs





MORGAN & CLAYPOOL
PUBLISHERS



Springer

World's First “Self-Driving” Database



No Human Labor – Half the Cost
No Human Error – 100x More Reliable

ORACLE®

oracle.com/selfdrivingdb



We help people see and understand data.

"A system that allows users to create stunning graphs interactively and easily from large multidimensional datasets."

– Jim Gray, Turing Award winner, about Tableau

A Home for Innovation: From VizQL to Hyper

VizQL is a visual query language that is the foundation of Tableau's query generation. It can speak to all major database systems as well as Tableau's blazingly fast data engine Hyper.

Tableau Acquires Hyper

In March 2016, Tableau acquired Hyper, a high-performance database system that started as a research project at Technical University Munich and later spun out into a startup.

Key technical personnel that pioneered code generation for main-memory database systems and achieved breakthroughs in query optimization and hybrid transactional and analytical processing continues to innovate from Tableau's offices in Seattle, Palo Alto, and our European research and development center in Munich.

We're Hiring!

Calling all technical talent – our Engineering team is hiring Software Engineers on both Development and Test teams as well as Research Engineers.

Visit careers.tableau.com



TO MAKE IT EASY TO DO BUSINESS ANYWHERE

We enable businesses to transform the way they market, sell and operate. Our businesses are comprised of core commerce, cloud computing, digital media and entertainment, innovation initiatives and others. Through our subsidiary Cainiao Network and investee affiliate Koubei, respectively, we participate in the logistics and local services sectors. In addition, we have a strategic relationship with Ant Financial Services, the financial services group that operates mainly through Alipay, the leading third-party online payment platform in China.

• Meet @ Alibaba

We enable hundreds of millions of commercial and social interactions among our users, between consumers and merchants, and among businesses every day.

• Work @ Alibaba

We empower our customers with the fundamental infrastructure for commerce and data technology, so that they can build businesses and create value that can be shared among our ecosystem participants.

• Live @ Alibaba

We strive to expand our products and services to become central to the everyday lives of our customers.



 **amazon**

**It's only
impossible
until it works**

**Ready to pioneer?
Apply at [Amazon.jobs](#)**

Amazon is an Equal Opportunity Employer



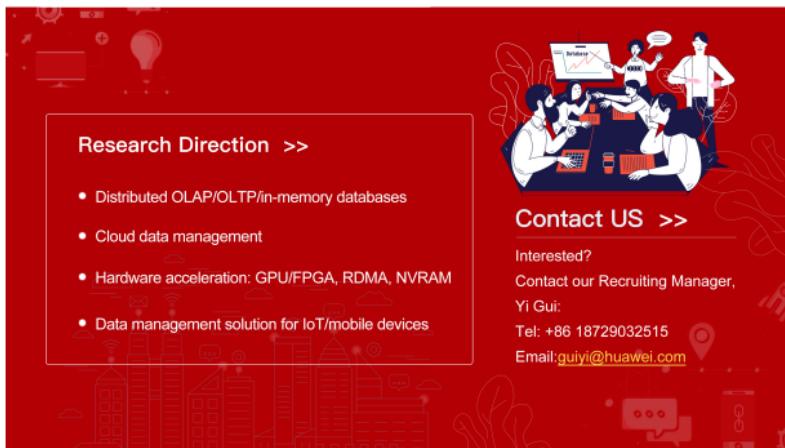




databricks®

Google

Welcome to join Huawei Database Team



The background of the page is a solid red color. It features a white rectangular box containing the "Research Direction" section. Below this box is a faint illustration of a city skyline with various icons like databases, clouds, and mobile devices. To the right is another white box titled "Contact US". The overall design is clean and professional.

Research Direction >>

- Distributed OLAP/OLTP/in-memory databases
- Cloud data management
- Hardware acceleration: GPU/FPGA, RDMA, NVRAM
- Data management solution for IoT/mobile devices



A stylized illustration of four people in white shirts and dark pants working together on a large whiteboard. The whiteboard has some handwritten text and a small chart. They are surrounded by various icons related to technology and data analysis.

Contact US >>

Interested?

Contact our Recruiting Manager,

Yi Gui:

Tel: +86 18729032515

Email: guiyi@huawei.com



IBM Research is hiring

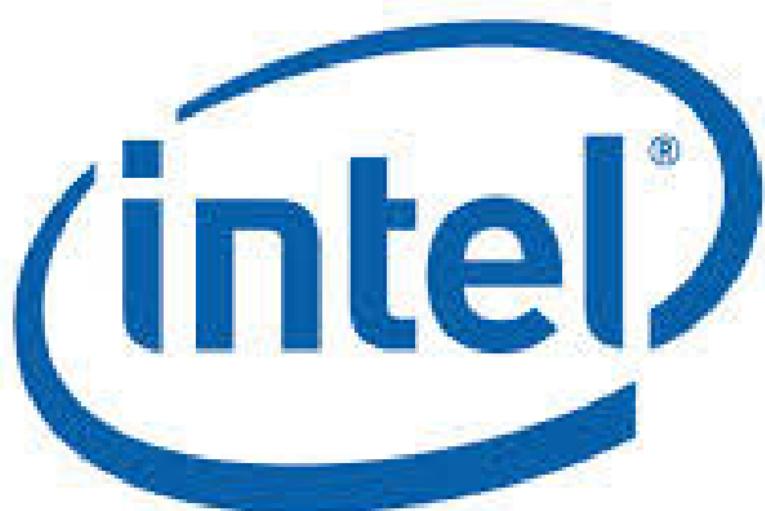
We live in a moment of remarkable change and opportunity. Data and technology are transforming industries and societies, ushering in a new era of Artificial Intelligence. IBM Research is a leader in this worldwide transformation, building on a long history of innovation.

For more than seven decades, IBM Research has defined the future of technology. Our scientists, among them six Nobel Laureates and six Turing Award winners, have produced ten U.S. National Medals of Technology and five U.S. National Medals of Science. Along the way we helped put a man on the moon, defeated Kasparov at chess, and built a Jeopardy! champion named Watson.

At IBM, you can achieve what others think is impossible. And in doing so, you'll play a significant role in shaping the future. Join us.

Discover what you can do at IBM Research
ibm.com/jobs

© Copyright IBM Corporation 2018. IBM, the IBM logo and ibm.com are trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. See current list at ibm.com/trademark. Other product and service names might be trademarks of IBM or other companies.



Megagon Labs

*We empower people with better information
to make their best decisions.*

Megagon Labs is the research lab for Recruit Holdings Co., Ltd that provides over 200 online services in the areas where people make daily decisions.

We conduct world-class research in the several areas, including data management, natural language processing, machine learning, data integration, and artificial intelligence. We collaborate with research in universities and publish in top-notch conferences.

Megagon Labs is hiring Research Scientists and Software Engineers! Visit our website at www.megagon.ai for more information.

www.megagon.ai

Join the SAP HANA Database Campus!

Are you passionate about Software Development and working on your IT degree? Do you want to start your career by working on the next generation database technologies?

Then join us – The SAP HANA Database Campus team!

The SAP HANA team develops a platform that performs parallel in-memory processing of huge data sets to offer extremely fast real-time responses for analytic and transactional queries. The platform also provides libraries for predictive, planning, text processing, spatial, and business analytics – all on the same architecture.

Learn more about the
SAP HANA Database Campus





THE DATA WAREHOUSE BUILT FOR THE CLOUD



Enabling every organization with the power, flexibility and instant elasticity to be data-driven.

© 2018 Snowflake Computing Inc. All Rights Reserved

AT SNOWFLAKE WE ARE:

Passionate, Innovative, Ambitious

We challenge ourselves at Snowflake to rethink what's possible for the data warehouse and deliver on that. We're looking for people who share that same passion and ambition.

Snowflake is hiring top database developers from Europe and around the world to grow our teams in San Mateo, Seattle, and our newly formed European Database R&D Center located in Berlin.

Visit us at :
www.snowflake.com/careers



Avalanche
Announcing Action Avalanche
The industry's first Gen III
cloud data warehouse service

You are used to working with the Avalanche data warehouse now. You can harness the power and scalability of our cloud data warehouse to fully integrate enterprise data and data streams designed for the cloud.

Deliver fast - Delivered Today

- Cloud Data Warehouse
- Cloud Data Integration
- Cloud Data Pipelines
- Cloud Data Processing
- Cloud Data Storage
- Cloud Data Analytics

From Start to Insight
In as little as 20 minutes
www.avalanche.com

Action

CAMBRIDGE UNIVERSITY PRESS

www.ebay.com www.ebayinc.com



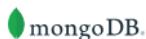
**Empowering People and Creating
Economic Opportunity for All.**

LEAN  CALE

We are fearless in
our innovation.

Think what we can do for your career.

We're seeking great minds like you to help us build the next generation in database technology. Join the team that is helping the world's most sophisticated organizations transform their industries by harnessing the power of data.



mongodb.com/careers
facebook.com/mongodb
@MongoDB | @MongoDBCareers

now

the essence of knowledge



TigerGraph

 undo

Intermittent software defects
you can't reproduce?

Eliminate guesswork in software failure diagnosis.
1. RECORD your program's execution as it fails
2. REPLAY the recording backwards and forwards
Get instant visibility into what your program did and why
and get to the root cause of the issue with 100% certainty.

Learn more at
<https://undo.io>

SIGM~~X~~D/
A M S **PXDS**
T E R
D A M **2X19**

www.sigmod2019.org