

8<sup>th</sup> IEEE International Conference on Cloud Computing Technology and Science  
Luxembourg, Dec 12<sup>th</sup> ~ Dec.15<sup>th</sup>, 2016



UNIVERSITÉ DU  
LUXEMBOURG

Welcome to IEEE CloudCom'16

Pascal Bouvry  
Sébastien Varrette  
Grégoire Danoy





# Prof. Pascal Bouvry

## General Co-Chair IEEE CloudCom 2016

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# After Singapore, Vancouver...

6th IEEE International Conference on Cloud Computing Technology and Science  
Singapore, 15 - 18 December 2014



7th IEEE International Conference on Cloud Computing Technology and Science  
Vancouver, Canada November 30 ~ December 3 2015





# After Singapore, Vancouver... Luxembourg

8<sup>th</sup> IEEE International Conference on Cloud Computing Technology and Science  
Luxembourg, Dec 12<sup>th</sup> ~ Dec.15<sup>th</sup>, 2016





# Where's Wally?

Hint: in Luxembourg





# Where's Wally?

Hint: in Luxembourg





# Luxembourg





## General Chair



**Sébastien Varrette**  
Research Associate  
Univ. of Luxembourg



**Pascal Bouvry**  
Full Professor  
Univ. of Luxembourg



**Albert Y Zomaya**  
Full Professor  
Univ. of Sidney

## Steering Committee



**Chunming Rong**  
Full Professor  
Univ. of Stavanger



**Martin Gilje Jaatun**  
Senior Scientist  
SINTEF

**Stephen L. Diamond** **Albert Y. Zomaya**

## Program Chair

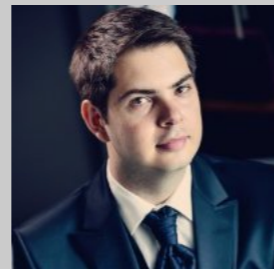


**Gregoire Danoy**  
Research Associate  
Univ. of Luxembourg



**Sathish Gopalakrishnan**  
Associate Professor  
Univ. of British Columbia

## Workshop



**Valentin Plugaru**  
Research Collaborator  
Univ. of Luxembourg

**Henry Chan**  
Hong Kong  
Polytechnic Univ.

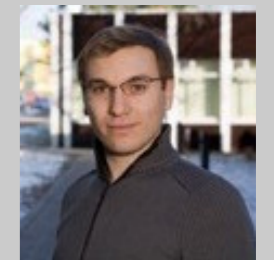
## Short Papers/Demo



**Xavier Besson**  
**Martin Rosalie**  
Research Associates  
Univ. of Luxembourg

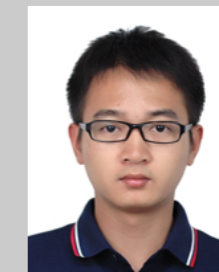


## Publication



**Hyacinthe Cartiaux**  
Technical Collaborator  
Univ. of Luxembourg

## PhD Consortium



**Lin Wang**  
Senior Researcher  
TU Darmstadt



# IEEE CloudCom 2016: Organizing Team

## ■ And also...

## ■ Local Arrangement

- Magali Martin, Univ of Luxembourg
- Natalie Kirf, Univ of Luxembourg
- Stephanie Annet, Univ of Luxembourg
- Daniel Gugan, Univ. of Luxembourg



## ■ Industry & Panel Chair

- Mazin Yousif, T-systems, US

## ■ Student Travel Grants

- Lin Wang, Univ. of Luxembourg

## ■ Sponsorship Chairs

- Joseph Emeras, SnT
- Xavier Besson, Univ. of Luxembourg

## ■ Financial Chair

- Magali Martin, Univ. of Luxembourg
- Laurent Betry, Univ. of Luxembourg

## ■ Technical Volunteers

- Abdallah Ibrahim
- Alban Rousset
- Ana-Maria Simionovici
- Andrea Capponi
- Boonyarit Changaival
- Christian Franck
- Emmanuel Kieffer
- Giuseppe Cacciatore
- Matthias Brust
- Sarah Dielh
- Shyam Wagle
- ...



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Many Thanks to  
all of you !!



## ■ Organisers



## ■ Supporting Institution

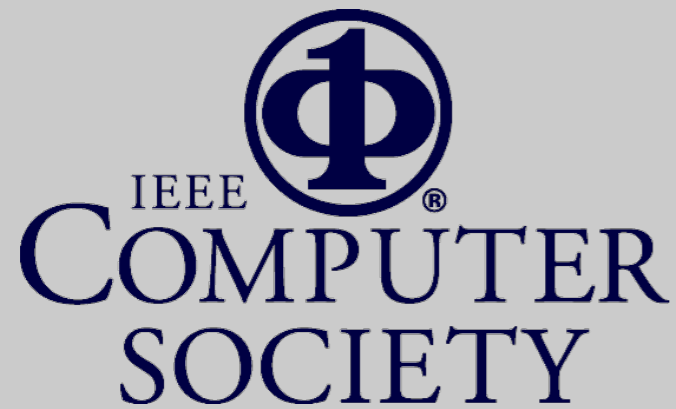


## ■ Patrons (Silver) Corporate Sponsors





# IEEE CloudCom 2016 Sponsors





# Venue: Alvisse Parc Hotel

<http://www.parc-hotel.lu/>







# Sébastien Varrette, PhD

## General Co-Chair IEEE CloudCom 2016

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# Program Overview

## ■ What you may have missed yesterday...

### ✓ 5 Workshops

- NetCloud, Data Teaching, QAC, CloudSPD, CloudBPM

### ✓ Keynote

- Grid'5000: Running a Large Instrument for Parallel and Distributed Computing Experiments

### ✓ 2 Practical Tutorials

- Reproducible Research at the Cloud Era
- Practical Grid'5000: IaaS deployment with OpenStack

### ✓ Cocktail Reception

# [Updated] Conference Program

Time	Tuesday, December 13	Wednesday, December 14	Thursday, December 15	Time						
08:15 - 09:00	<b>REGISTRATION</b>	<b>REGISTRATION</b>	<b>REGISTRATION</b>	08:15 - 09:30						
09:00- 09:30	<b>OPENING CEREMONY</b> Room: Europe	Conference Lobby	Conference Lobby							
09:30 - 10:30	<b>Plenary Session 1</b> <b>Keynote:</b> Prof. Mischa Dohler Room: Europe	<b>Plenary Session 3</b> <b>Keynote:</b> Prof. Lizhe Wang Room: Europe	<b>Plenary Session 6</b> <b>Keynote:</b> Dr. Reinhard Schneider Room: Europe	09:30 - 10:30						
10:30 - 11:00	<b>COFFEE BREAK</b>			10:30 - 11:00						
11:00 - 12:15	<b>Session 1A</b> Architecture & Virtualization I	<b>Session 1B</b> Cloud Services & Applications I	<b>Session 1C</b> IoT & Mobile on Cloud	<b>Session 4A</b> Architecture & Virtualization III	<b>Session 4B</b> Cloud Services & Applications III	<b>Session 4C</b> HPC in/with the Cloud	<b>Session 6A</b> Architecture & Virtualization V	<b>Session 6B</b> Distributed Cloud / Edge Computing II	<b>Session 6C</b> Short Papers II	11:00 - 12:15
12:15 - 13:30	<b>LUNCH</b>			<b>LUNCH &amp; POSTER/DEMO SESSION</b>						12:15 - 13:30
13:30 - 14:30	<b>Plenary Session 2</b> <b>Keynote:</b> Prof. Dhabaleswar K. Panda Room: Europe			<b>Posters and Demos Session</b>			<b>Session 7A</b> Security and Privacy	<b>Session 7B</b> Cloud Services & Applications V	<b>Session 7C</b> PhD Consortium	13:30 - 15:30
14:30 - 15:30	<b>Posters and Demos Session</b> Conference Lobby		<b>Session 2C</b> Short Papers I	<b>Plenary Session 4</b> <b>Plenary Panel:</b> Cloud Computing & Big Data Tackling the Fintech Challenges Moderator: Mazin Yousif, PhD <b>Keynotes:</b> CloudCom Sponsors & Satellite events						
15:30 - 16:00	<b>COFFEE BREAK &amp; POSTER/DEMO SESSION</b>			<b>COFFEE BREAK</b>			<b>CLOSING CEREMONY</b> Room: Europe			15:30 - 16:30
16:00 - 17:15	<b>Session 3A</b> Architecture & Virtualization II	<b>Session 3B</b> Cloud Services & Applications II	<b>Session 3C</b> Big Data	<b>Session 5A</b> Architecture and Virtualization IV	<b>Session 5B</b> Cloud Services & Applications IV	<b>Session 5C</b> Distributed Cloud / Edge Computing I				
17:15 - 18:00	Bus Transportation Parc Alvisse to Philharmonie									
18:00 - 19:00	<b>WELCOME RECEPTION</b> <b>Philharmonie Luxembourg</b> 1, place de l'Europe, L-1499 Luxembourg T +352 26 02 271			Bus Transportation Parc Alvisse to Remich <b>Luxembourg City SightSeeing Tour</b>						
19:00 - 23:00				Bus Transportation Philharmonie to Parc Alvisse			<b>CONFERENCE BANQUET AND CRUISE</b> <b>Boat Trip on the Moselle River / NaviTours</b> Boarding @7pm: Quai de la Moselle, 5553 Remich <a href="http://www.navitours.lu/">http://www.navitours.lu/</a> T +352 75 84 89 M +352 621 130 054			
				Bus Transportation Remich to Parc Alvisse						

Conference Rooms	
<b>Plenary:</b>	Europe
<b>Sessions *A:</b>	Vianden+Wiltz
<b>Sessions *B:</b>	Fishbach
<b>Sessions *C:</b>	Diekirch+Echternach



# Conference Program Overview

## ■ 3 parallel sessions, 7 Research Tracks

- ✓ Architecture and Virtualization
- ✓ Cloud Services and Applications
- ✓ IoT and Mobile on Cloud
- ✓ Big Data
- ✓ High Performance Computing in/with the Cloud
- ✓ Security and Privacy
- ✓ Distributed Cloud / Cloud Brokering / Edge Computing 

## ■ Plenary Sessions: 4 Keynotes, 1 Panel

## ■ Short Papers / Posters and Demos

## ■ PhD Consortium

# Conference Program: Today

Time	Tuesday, December 13, 2016		
08:15 - 09:00	REGISTRATION - Conference Lobby		
08:45 - 09:30	<b>OPENING CEREMONY</b> - General Chairs Welcome - Steering Committee Welcome Room: Europe		
09:30 - 10:30	<b>Keynote:</b> "The Tactile Internet – IoT, 5G and Cloud on Steroids" by Prof. Mischa Dohler, King's College London, UK Room: Europe		
10:30 - 11:00	COFFEE BREAK		
11:00 - 12:15	<b>Session 1A</b> Architecture & Virtualization I Room: Vianden/Wiltz	<b>Session 1B</b> Cloud Services & Applications I Room: Fischbach	Session 1C IoT & Mobile on Cloud Room: Diekirch/Echternach
12:15 - 13:30	LUNCH		
13:30 - 14:30	<b>Keynote:</b> "HPC Meets Cloud: Opportunities and Challenges in Designing High-Performance MPI and Big Data Libraries on Virtualized InfiniBand Clusters" by Prof. Dhabaleswar K. Panda, Ohio State University, US		
14:30 - 15:30	<b>Posters and Demos Session</b> Conference Lobby	<b>Session 2C</b> Short Papers I Room: Diekirch/Echternach	
15:30 - 16:00	COFFEE BREAK & POSTER/DEMO SESSION		
16:00 - 17:15	<b>Session 3A</b> Architecture & Virtualization II Room: Vianden/Wiltz	<b>Session 3B</b> Cloud Services & Applications II Room: Fischbach	<b>Session 3C</b> Big Data Room: Diekirch/Echternach
17:15 - 18:00	Bus Transportation Philharmonie to Parc Alvisse		
18:00 - 21:00	 <b>WELCOME RECEPTION</b> Philharmonie Luxembourg 1, place de l'Europe, L-1499 Luxembourg T +352 26 02 271		
21:00 - 22:00	Bus Transportation Philharmonie - <b>City Center</b> - Parc Alvisse		

## ■ 2 Keynotes:

✓ Prof. Mischa Dohler

✓ Prof. D.K. Panda



## ■ 8 sessions

## ■ Social Event:

✓ Welcome Reception

▸ *Philharmonie Luxembourg*


▸ incl. lunch 😊

✓ Don't miss the bus!

✓ City tour stop upon return

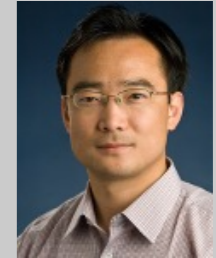


# Conference Program: Tomorrow (wednesday)

Time	Wednesday, December 14		
08:15 - 09:30	<b>REGISTRATION</b> <i>Conference Lobby</i>		
09:30 - 10:30	<b>Plenary Session 3</b> <b>Keynote:</b> Prof. Lizhe Wang <i>Room: Europe</i>		
10:30 - 11:00	<b>COFFEE BREAK</b>		
11:00 - 12:15	<b>Session 4A</b> Architecture & Virtualization III <i>Room: Vianden/Wiltz</i>	<b>Session 4B</b> Cloud Services & Applications III <i>Room: Fischbach</i>	<b>Session 4C</b> HPC in/with the Cloud <i>Room: Diekirch/Echternach</i>
12:15 - 13:30	<b>LUNCH</b>		
13:30 - 14:00	<b>Posters and Demos Session</b>		
14:00 - 15:30	<b>Plenary Session 4</b> <b>Plenary Panel:</b> Cloud Computing & Big Data Tackling the Fintech Challenges Moderator: Mazin Yousif, PhD <b>Keynotes:</b> CloudCom Sponsors & Satellite events		
15:30 - 16:00	<b>COFFEE BREAK</b>		
16:00 - 17:30	<b>Session 5A</b> Architecture and Virtualization IV	<b>Session 5B</b> Cloud Services & Applications IV	<b>Session 5C</b> Distributed Cloud / Edge Computing I
17:30 - 18:00			
18:00 - 19:00	<i>Bus Transportation Parc Alvisse to Remich                      Luxembourg City SightSeeing Tour</i>		
19:00 - 23:00	<b>CONFERENCE BANQUET AND CRUISE</b> <b>Boat Trip on the Moselle River / NaviTours</b> Boarding @7pm: Quai de la Moselle, 5553 Remich <a href="http://www.navitours.lu/">http://www.navitours.lu/</a> T +352 75 84 89 M +352 621 130 054		
	<i>Bus Transportation Remich to Parc Alvisse</i>		

## ■ 1 Keynotes:

✓ Prof. Lizhe Wang



## ■ 1 Panel Session

## ■ 6 Sessions

## ■ Social Event

✓ Gala Dinner / NaviTour

✓ Boat Trip / Remich Port

✓ **Don't miss the bus!**

▸ **6pm @ Parc Alvisse**

✓ City tour stop upon return

# Conference Program: Thursday

Time	Thursday, December 15		
08:15 - 09:30	<b>REGISTRATION</b> <i>Conference Lobby</i>		
09:30 - 10:30	<b>Plenary Session 6</b> <i>Keynote: Dr. Reinhard Schneider</i> <i>Room: Europe</i>		
10:30 - 11:00	<b>COFFEE BREAK</b>		
11:00 - 12:15	<b>Session 6A</b> Architecture & Virtualization V	<b>Session 6B</b> Distributed Cloud / Edge Computing II	<b>Session 6C</b> Short Papers II
12:15 - 13:30	<b>LUNCH &amp; POSTER/DEMO SESSION</b>		
13:30 - 15:30	<b>Session 7A</b> Security and Privacy	<b>Session 7B</b> Cloud Services & Applications V	<b>Session 7C</b> PhD Consortium
15:30 - 16:30	<b>CLOSING CEREMONY</b> <i>Room: Europe</i>		

## ■ 1 Keynotes:

✓ Prof. Reinhard Schneider



## ■ 6 Sessions

## ■ Closing Ceremony

✓ **Best [Students] Papers**



# [Again] Many Thanks to

- **Steering Committee Chairs**
  - Prof. Chunming Rong and Dr. Martin Gilje Jaatun
- **Magali Martin**
- **\*\*\*\*\* Chairs**
- **Technical Volunteers**
- **To all CloudCom 2016 Authors and Presenters**
  
- **Satisfaction Survey: your feedback is important**  
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- **Visit the booths of our sponsors**
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# Grégoire Danoy, PhD

## Program Co-Chair IEEE CloudCom 2016

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# CloudCom 2016 Technical Program Committee

## ■ Total of 7 tracks, with 14 co-chairs

1. Architecture & Virtualization: Prof. Stefan Schmid, Dr. Javid Taheri
2. Cloud Services & Applications: Dr. Patrick Hung, Prof. Shih-Chia Huang
3. Internet of Things (IoT) and Mobile in the Cloud: Dr. Yan Zhang, Prof. Jiannong Cao
4. Big Data: Dr. Tomasz Wiktorski, Dr. Jinjun Chen
5. HPC in/with the Cloud: Dr. Sebastien Varrette, Dr. Matei Ripeanu
6. Security and Privacy: Prof. Nuno Ferreira Neves, Dr. Wenbo He
7. Distributed Cloud/Edge Computing: Prof. El-Ghazali Talbi, Dr. Adrien Lebre

## ■ Ph.D. Consortium:

- Dr. Lin Wang, Magali Martin

## ■ Posters, Demos & Short Papers:

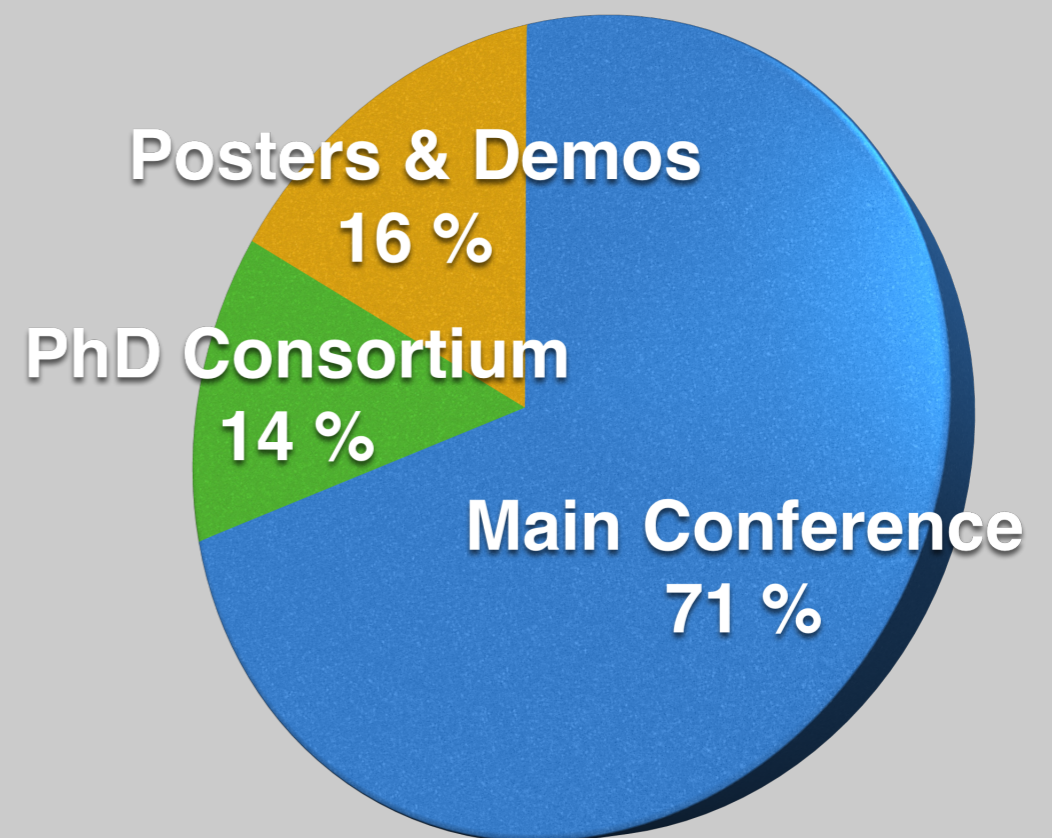
- Dr. Xavier Besseron, Dr. Martin Rosalie

- **Total of 264 PC members from 37 countries around the globe**
  - Luxembourg, France, Germany, Taiwan, USA, Spain, India, Norway, Hungary, Ireland, Italy, Mexico, Sweden, Denmark, Austria, Canada, Portugal, Hong Kong, Australia, Argentina, China, Brazil, Uruguay, Romania, Thailand, Switzerland, England, Netherlands, Belgium, Poland, Greece, Turkey.
- **Ensured a total of 817 reviews in ~2 months**



# CloudCom 2016 Submissions

- **Total of 273 submissions**
  - From 55 countries
- **193 to the Main Conference**
- **37 to the PhD consortium**
- **43 to the Posters & Demos Session**



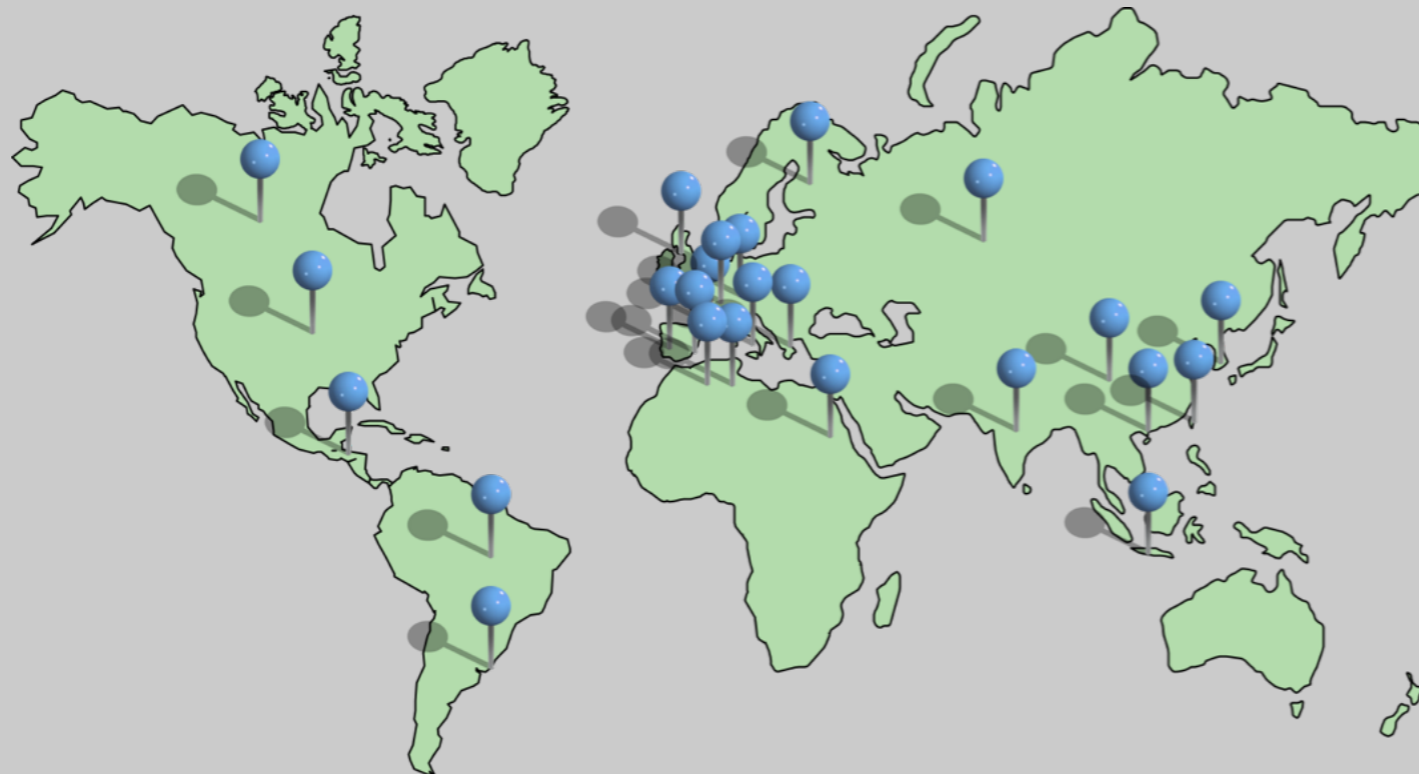
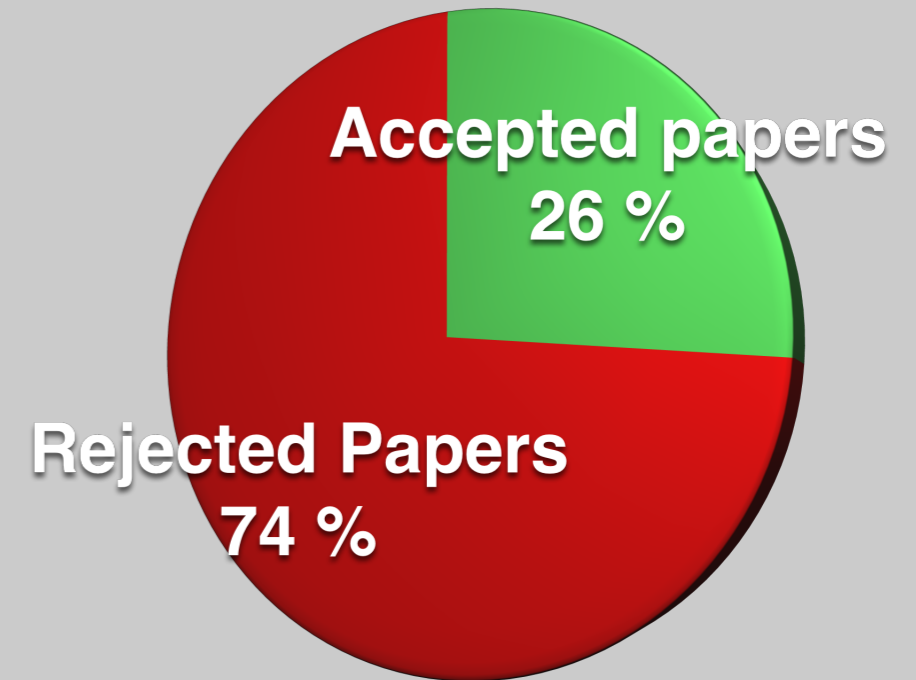
# CloudCom 2016 – Accepted Contributions

- **51 high quality full papers were selected**

- 26% acceptance rate
- From 28 countries
- More than 3.5 reviews per paper (avg.)
- **Best Paper and Best Student Awards**

- **7 accepted to the PhD consortium**

- **14 accepted to the Posters & Demos Session**





# Thank you to

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- **Steering Committee Chairs**

- Prof. Chunming Rong and Dr. Martin Gilje Jaatun

- **General chairs**

- Prof. Albert Y. Zomaya, Prof. Pascal Bouvry and Dr. Sébastien Varrette

- **Track Chairs and Program Committee members**

- **Publication Chair**

- Hyacinthe Cartiaux

- **To all CloudCom 2016 Authors and Presenters**



# Chunming Rong

## Chair Steering Committee

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September 12-15, Luxembourg  
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