

# Jinlai Xu

## Curriculum Vitae

### Information

Name Jinlai Xu  
Email xujinlai@gmail.com

### Education

- 2015–present **PhD in Information Science (expected)**, *University of Pittsburgh*.
- 2012–2015 **M.E in Software Engineering**, *China University of Geosciences (211)*.  
*GPA – 89.9/100, Major GPA – 91.9/100*,  
Thesis Topic: MapReduce Performance Acceleration and Analytics with Intermediate Results Reusing.
- 2008–2012 **B.E. in Software Engineering**, *China University of Geosciences (211)*.  
*GPA – 88.6/100, Major GPA – 92.9/100*, ranked 1st/96,  
Thesis Topic: the Design and Implementation of the Quadrotor Autopilot and 3-D Point Cloud Generation and Processing System.

### Interests

Research Edge Computing, Cloud Computing, Distributed System, Game Theory.  
Sports Soccer

### Publications

- Jinlai Xu and Balaji Palanisamy. Cost-aware Resource Management for Federated Clouds Using Resource Sharing Contracts. In *Cloud Computing (CLOUD), 2017 IEEE 10th International Conference on*, pages 238–245. IEEE, 2017.
- Jinlai Xu and Balaji Palanisamy. Optimized Contract-based Model for Resource Allocation in Federated Geo-distributed Clouds. *IEEE Transactions on Services Computing (under review)*, 2017.
- Jinlai Xu, Balaji Palanisamy, Heiko Ludwig, and Qingyang Wang. Zenith: Utility-aware Resource Allocation for Edge Computing. In *Edge Computing (EDGE), 2017 IEEE International Conference on*, pages 47–54. IEEE, 2017.
- Jinlai Xu, Balaji Palanisamy, Yuzhe Tang, and SD Madhu Kumar. PADS: Privacy-preserving Auction Design for Allocating Dynamically Priced Cloud Resources. In *3rd IEEE International Conference on Collaboration and Internet Computing (IEEE CIC 2017)*. IEEE, 2017.
- Hong Yao, Jinlai Xu, Zhongwen Luo, and Deze Zeng. MEMoMR: Accelerate MapReduce via reuse of intermediate results. *Concurrency and Computation: Practice and Experience*, 28(14):3814–3829, 2016.

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## Professional Services

- Journal Review
  - IEEE Transactions on Services Computing (TSC)
  - Information Systems Frontiers (ISFI) : IRI - Special Issue on Foundations of Reuse
  
- Conference Review
  - International Workshop on Internet-scale Clouds and Big Data (ISCBD 2016)
  - IEEE International Conference on Communications (ICC 2015)
  
- Conference External Review
  - 2017 IEEE International Conference on Big Data (Big Data 2017)
  - ACM International Conference on Information and Knowledge Management (CIKM 2016)
  
- Conference Volunteer
  - IEEE 18th International Conference on Information Reuse and Integration (IRI 2017), San Diego, CA, USA. Aug 4 - 6, 2017
  - The 37th International Conference on Distributed Computing Systems (ICDCS 2017), Atlanta, GA, USA. June 5 - 8, 2017
  - IEEE 17th International Conference on Information Reuse and Integration (IRI 2016), Pittsburgh, PA, USA. Jul 28 - 30, 2016
  - IEEE 2nd International Conference on Collaboration and Internet Computing (CIC 2016), Pittsburgh, PA, USA. Nov 1 - 3, 2016
  
- Conference Webmaster
  - IEEE 19th International Conference on Information Reuse and Integration (IEEE IRI 2018)
  - IEEE 18th International Conference on Information Reuse and Integration (IEEE IRI 2017)
  - International Workshop on Internet-scale Clouds and Big Data (ISCBD 2016)

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## Teaching Experience

- 2017 Spring **Graduate Student Assistant**, University of Pittsburgh
  - Cloud Computing (2017 Spring), Information Security and Privacy (2017 Fall)
  - Instructor: Prof. Balaji Palanisamy
  
- 2013 Fall **Teaching Assistant**, China University of Geosciences
  - Advanced Programming Language (JAVA)
  - Instructor: Prof. Shengwen Li

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## Research Experience

- 2015–Present **Graduate Student Assistant**, THE LABORATORY FOR EDUCATION AND RESEARCH ON SECURITY ASSURED INFORMATION SYSTEMS (LERSAIS), University of Pittsburgh, Pittsburgh.
  - Reviewed related literatures (mainly in Edge Computing and Cloud Computing)
  - Focus on resource sharing problems in Cloud and Edge Computing
  - Publish two papers on this topic:
    - Jinlai Xu, Balaji Palanisamy, Heiko Ludwig, Qingyang Wang. Zenith: Utility-aware Resource Allocation for Edge Computing. In IEEE Edge 2017.
    - Jinlai Xu, Balaji Palanisamy. Cost-aware Resource Management for Federated Clouds Using Resource Sharing Contracts. IEEE Cloud 2017.

- 2012–2015 **Research Assistant**, ROBOTICS AND ARTIFICIAL INTELLIGENCE LABORATORY, China University of Geosciences, Wuhan.
- Reviewed related literatures (mainly in Cloud Computing)
  - Constructed the cloud computing platform for our faculty:
    - Designed the virtualization solution for the cluster. (based on Xen)
    - Deployed Hadoop and related application(Hive, Spark, Solr ...) on the cluster.
  - Studied MapReduce programming model and did research on it:
    - Read the source code of MapReduce in Hadoop project.
    - Proposed a new method to reuse the intermediate results automatically and data-awarenessly and implemented the prototype system by modifying the core code of MapReduce.
    - the paper is published in Concurrency and Computation: Practice and Experience (CCPE) (Title: **MEMoMR: Accelerate MapReduce via Reuse of Intermediate Results**)
  - Managed the cluster in our faculty:
    - Allocated the virtual machines and network resource.
    - Supported a mirror site on the cluster (<http://mirrors.cug.edu.cn>).
- 2009–2012 **Undergraduate Research Assistant**, ROBOTICS AND ARTIFICIAL INTELLIGENCE LABORATORY, China University of Geosciences, Wuhan.
- Reviewed related literatures (mainly in Computer Vision and Robotics).
  - Participated in The 9<sup>th</sup> Robot Soccer Tournament of China and The Tryouts for FIRA in Changchun in freshmen year.
  - Studied the architecture and implementation of ROS(The Robot Operating System) and preliminarily deployed it on the robots control panel (Version: RB100 by RoBoard).
  - Successfully applied for The National College Students Innovation Experiment Program:
    - **Topic: Small Model Aircraft Autopilot System and Aerial Photo Research**
    - Chose Quadrotor(an aircraft with four rotors) as the carrier platform of the research.
    - Studied the theory of balancing the Quadrotor with MikroKopter(one of the most famous open source UAV projects).
    - Studied and implemented the point clouds registration algorithm ICP and RANSAC on ROS.
    - Used ASUS Xtion PRO (a device like Kinect) to get the point cloud data and evaluated the algorithm.
    - Wrote graduation thesis based on this topic.(Title: the Design and Implementation of the Quadrotor Autopilot and 3-D Point Cloud Generation and Processing System)

## Honors & Awards

- 2013–2014 **Outstanding Student Award**, China University of Geosciences, China
- 2010–2011 **Fellows Scholarship**, China University of Geosciences, China
- 2009–2010 **National Scholarship**, Ministry of Education, China
- 2009 **The Second Place of AndroSot(Full-autonomous 3vs3 Humanoid Robot Soccer)**, The 9<sup>th</sup> Robot Soccer Tournament of China and The Tryouts for FIRA, Changchun, China
- 2009 **The First Prize of AndroSot(Semi-autonomous 3vs3 Humanoid Robot Soccer)**, The 9<sup>th</sup> Robot Soccer Tournament of China and The Tryouts for FIRA, Changchun, China

## Languages

- Chinese **Native proficiency**
- English **Professional working proficiency** *Con conversationally fluent*

## Skills

- Basic JAVA, C++
- Intermediate PYTHON, L<sup>A</sup>T<sub>E</sub>X, Linux, Emacs, GitHub, Hadoop
- Advanced Cloud Computing Infrastructure, Cloud Resource Virtualization, Computer Vision