

# Lianhua CHI

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RESEARCH INTERESTS	Machine Learning and Data Mining with particular interests in making sense of big data with effective and agile data analytics, especially with hashing techniques.	
EDUCATION	<b>University of Technology Sydney</b> , Sydney, NSW, Australia <i>Doctor of Philosophy (Information Technology - Machine Learning)</i> <b>Feb 2013 – Aug 2015</b> <b>Huazhong University of Science and Technology</b> , Wuhan, Hubei, China <i>Doctor of Philosophy (Computer Software and Theory - Data Mining)</i> <b>Sep 2009 – Sep 2015</b> <b>Huazhong University of Science and Technology</b> , Wuhan, Hubei, China <i>Master Degree Candidate (Computer Software and Theory - Database)</i> <b>Sep 2008 – Jul 2009</b> <b>Wuhan University of Science and Technology</b> , Wuhan, Hubei, China <i>Bachelor of Engineering (Computer Science and Technology)</i> <b>Sep 2004 – Jul 2008</b> <b>Wuhan University of Science and Technology</b> , Wuhan, Hubei, China <i>Bachelor of Literature (English)</i> <b>Sep 2005 – Jul 2008</b>	
SELECTED AWARDS	<b>Young Global Changer Award</b> in 2017 by Think Summit GLOBAL SOLUTIONS - G20 <b>Romberg Grant Award</b> in 2016 by Heidelberg Laureate Forum and University of Heidelberg <b>One of Top 200 Young Researchers Globally</b> in 2016 by Heidelberg Laureate Forum <b>First Patent Application Invention Achievement Award</b> in 2016 by IBM <b>Best Paper Award</b> by 17th Pacific-Asia Conference on Knowledge Discovery and Data Mining <b>Social Welfare Award</b> in 2009 by Huazhong University of Science and Technology	
HIGHLIGHT PROFESSIONAL ACTIVITIES	<b>Think 20 Summit GLOBAL SOLUTIONS</b> , Berlin, Germany <i>Young Global Changer</i> <b>28th May 2017 – 31st May 2017</b> <i>Highlights:</i> <ul style="list-style-type: none"><li>• This summit, mandated by the German G20 Presidency, brought young visionaries from around the globe to Berlin to involve the views and ideas of the next generation into global problem-solving, and built a sustainable, long-term Young Global Changers network</li><li>• Over 1300 early-career professionals from 140 different countries applied for this programme. A jury selected 100 (representing 100 countries) of them to come to Berlin</li></ul> <b>The 4th Heidelberg Laureate Forum</b> , Heidelberg, Germany <i>Invited Participant</i> <b>18th Sep 2016 – 23rd Sep 2016</b> <i>Highlights:</i> <ul style="list-style-type: none"><li>• The Heidelberg Laureate Forum is a one-week event combining scientific, social and outreach activities for young laureates in the field of mathematics and science to network with pioneers in the same field</li><li>• Over 2000 young researchers from all over the world applied for this programme. Only the 200 most qualified young researchers were granted this opportunity</li></ul>	

**IBM Research**, Melbourne, Victoria, Australia

**Postdoctoral Research Scientist**

**May 2015 – Current**

*Responsibilities:*

- Developed and evaluated data correlation analytics on open source datasets from different sectors
- Optimised hospital resource management with machine learning techniques and SPSS
- Analysing big data in social media and evaluating event impacts on time series
- Working on content annotation for Watson Education and Watson Health

*Achievements within 24 months:*

- 7 patents (3 filed, 4 submitted)
- 4 papers published, 2 abstracts accepted, 2 journals accepted (impact factor: one is 8.82 and the other is 7.384), 1 journal submitted, 1 conference paper submitted
- Supervised 2 interns on the Geotagger project and Event API project with successful demos
- Developed an Alpha-maturity asset
- Received the "put the client first" recognition in IBM Recognition Centre

**University of New South Wales**, Sydney, NSW, Australia

**Data Specialist**

**Apr 2015– May 2015**

*Responsibilities:*

- Exploration, interpretation and visualisation of Massive Open Online Courses (MOOC) data

**University of Technology Sydney**, Sydney, NSW, Australia

**Visiting Researcher**

**Mar 2012– Feb 2013**

*Responsibilities:*

- Collaborated with my colleagues and supervisors to solve existing problems and develop new theories on big data stream classification

**DaMeng Database Co., Ltd.**, Wuhan, Hubei, China

**Software Engineer**

**Jul 2008– Mar 2011**

*Responsibilities:*

- Designed the OLAP system interface and programmed OLAP application using Java
- Managed and designed data warehouse, processing a variety of large-scale data from different data platforms

PATENTS

Lianhua Chi, Alessio Bonti, "SYSTEM, METHOD AND COMPUTER PROGRAM FOR A COGNITIVE MEDIA STORY EXTRACTOR AND VIDEO COMPOSER", US YOR920161026US1, filed 2016.

Lianhua Chi, Bo Han, Anna Phan, Chris Butler, Juerg von Kaenel, "SYSTEM AND METHOD FOR UNSTRUCTURED METADATA CORRELATION", US YOR920160975US1, filed 2017

Lianhua Chi, Alessio Bonti, "SYBIL IDENTIFICATION MECHANISM FOR FRAUD DOCUMENTS DETECTION THROUGH COGNITIVE BASED PERSONAL ENCRYPTION KEY", filed 2017

RESEARCH  
PAPERS

**Research area: Hashing on Big Data Analysis**

- **Lianhua Chi**, Bin Li, Xingquan Zhu, Shirui Pan, Ling Chen, "Hashing for Adaptive Real-time Graph Stream Classification with Concept Drifts", In *IEEE Transactions on Cybernetics*, 2017. **(Impact Factor is 7.384)**
- **Lianhua Chi**, Xingquan Zhu, "Hashing Techniques: A Survey and Taxonomy", In *ACM Computing Survey*, 2017. **(A\* and Impact Factor is 8.82)**
- **Lianhua Chi**, "Hashing for large-scale structured data classification", Ph.D. Thesis, 2015.
- **Lianhua Chi**, Bin Li, Xingquan Zhu, "Fast Graph Stream Classification Using Discriminative Clique Hashing", In *Pacific-Asia Conference on Knowledge Discovery and Data Mining*, 225–236, Gold Coast, Australia, 2013. **(PAKDD-13 Best Long Paper)**

- **Lianhua Chi**, Bin Li, Xingquan Zhu, “Context-Preserving Hashing for Fast Text Classification”, in *SIAM International Conference on Data Mining*, 100–108, Philadelphia, Pennsylvania, USA, 2014. (**SDM-14**)
- Ting Guo, **Lianhua Chi**, Xingquan Zhu, “Graph hashing and factorization for fast graph stream classification”, In *22nd ACM international conference on Information and Knowledge Management*, 1607–1612, San Francisco, California, USA, 2013. (**CIKM-13**)
- Bin Li, Xingquan Zhu, **Lianhua Chi**, Chengqi Zhang, “Nested Subtree Hash Kernels for Large-Scale Graph Classification over Streams”, In *IEEE International Conference on Data Mining*, 399–408, Brussels, Belgium, 2012. (**ICDM-12**)

**Research area: Geolocation Prediction in Social Media**

- Jey Han Lau, **Lianhua Chi**, Khoi-Nguyen Tran and Trevor Cohn “End-to-end Network for Twitter Geolocation Prediction and Hashing”, submitted to *the 8th International Joint Conference on Natural Language Processing (IJCNLP 2017)*.
- **Lianhua Chi**, Kwan Hui Lim, Nebula Alam, Chris Butler, “Geolocation Prediction in Twitter using Location Indicative Words and Textual Features”, in *the 2nd Workshop on Noisy User-generated Text (W-NUT)*, pp. 227, 2016.
- Bo Han, Antonio Jose Jimeno Yepes, Andrew MacKinlay and **Lianhua Chi**, “Temporal Modelling of Geospatial Words in Twitter”, in *Australasian Language Technology Association Workshop*, pp. 133, 2016.

**Research area: Event Impact Analysis**

- **Lianhua Chi**, Saket Sathe, Bo Han, Yun Wang, “A Novel Method for Assessing Event Impacts on Event-Driven Time Series”, in *IEEE International Workshop on Data Mining for Service in ICDM 2016*, 2016.
- **Lianhua Chi**, Bo Han, Yun Wang, “Open Problem: Accurately Measuring Event Impacts on Time Series”, in *the 2nd SIGKDD Workshop on Mining and Learning from Time Series in KDD16*, 2016.

**Research area: Time Series Analysis**

- **Lianhua Chi**, Hehua Chi, Yucai Feng, Shuliang Wang, and Zhongsheng Cao, “Comprehensive and Efficient Discovery of Time Series Motifs”, In *Journal of Zhejiang University SCIENCE C*, 12(12), 1000–1009, Springer, 2011.
- Yucai Feng, **Lianhua Chi**, Hehua Chi, Chuanlu Liu, “QoM: An Effective Querying Method for Time Series Database”, In *2012 IEEE International Conference on Granular Computing (GrC)*, 129–134, 2012.
- **Lianhua Chi**, Yucai Feng, Hehua Chi and Ying Huang, “Face Image Recognition based on Time Series Motif Discovery”, In *2012 IEEE International Conference on Granular Computing (GrC)*, 72–77, 2012.
- Hehua Chi, Jeubo Wu, Shuliang Wang, **Lianhua Chi**, Meng Fang, “Mining Time Series Data based Upon Cloud Model”, In *the International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Vol. 38, Part II, 2010.

**Research area: Healthcare, Database Security and Face Recognition**

- Hamideh Anjomshoa, Olivia Smith and **Lianhua Chi**, “Machine Learning and Optimisation Techniques in Managing Operating Theatres”, in *28th European Conference on Operational Research*, 2016.
- Hamideh Anjomshoa and **Lianhua Chi**, “Machine Learning to Predict Patient Demand for Surgeries”, in *24th National Conference of the Australian Society for Operations Research*, pp. 53, 2016.
- Zongmin Cui, Hong Zhu, Jie Shi, **Lianhua Chi** and Ke Yan, “Efficient Authorisation Update on Cloud Data”, In *International Journal of Web and Grid Services*, 12(2), 109–141, Inderscience Publishers (IEL), 2016.
- Zongmin Cui, Hong Zhu, Jie Shi, **Lianhua Chi** and Ke Yan, “Lightweight Management of Authorization Update on Cloud Data”, In *2013 International Conference on Parallel and Distributed Systems (ICPADS)*, 456–461, 2013.
- Zongmin Cui, Hong Zhu, **Lianhua Chi**, “Lightweight Key Management on Sensitive Data in the Cloud”, In *Security and communication networks*, 6(10), 1290–1299, Wiley Online Library, 2013.

- Juebo Wu, Hehua Chi and **Lianhua Chi**, “A Cloud Model-based Approach for Facial Expression Synthesis”, In *Journal of Multimedia*, 6(2), 217–224, 2011.
- Juebo Wu, Hehua Chi, Shuliang Wang and **Lianhua Chi**, “Facial Expression Synthesis based on Cloud Model”, In *Intelligent Systems and Applications (ISA), 2010 2nd International Workshop on*, pp. 1–4, 2010.
- Hehua Chi, **Lianhua Chi**, Meng Fang and Juebo Wu, “Facial Expression Recognition based on Cloud Model”, In *the International Archives of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Vol. 38, Part II, 2010.

SELECTED  
PROFESSIONAL  
SERVICES

- *Organising Committee, Program Chair (Application Track)* - AusDM 2017: The 15th Australasian Data Mining Conference
- *Program Committee Member (Application Track)* - AusDM 2016: The 14th Australasian Data Mining Conference
- *Reviewer* - WWWJ: World Wide Web Journal
- *Reviewer* - IEEE Intelligent Systems
- *Reviewer* - Australasian Journal of Information Systems

SKILLS

- Frontend: HTML/CSS/Javascript
- Languages: Python, R, Matlab, Java, C/C++
- Modelling: scikit-learn, word2vec, UIMA, Pattern, Keras (TensorFlow)
- Backend: popular SQL and non-SQL databases e.g., MySQL, MongoDB
- Infrastructure: DevOps (Git, Jenkins), clusters (HPC)

REFEREES

Available upon request