# Curriculum Vitae

### Jimmy Ho Man Lee (Updated on June 29, 2020)

## 1 Personal Data

| Sex:             | Male   | Date of birth: | 20 <u>th</u> August, 1963 |
|------------------|--|----------------|---------------------------|
| Telephone:       | (+852) 39438426  | Email:         | jlee@cse.cuhk.edu.hk      |
| Mailing address: | Department of Computer Science and Engineering, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong |                |                           |

## 2 Education and Professional Qualification

| $\operatorname{Sep}/12$ : | Fellow, The Hong Kong Institution of Engineers, Hong Kong  |
|---------------------------|--|
| Sep/88–Jul/92:            | Ph.D. (Computer Science), University of Victoria, Victoria, B.C., Canada   |
| May/87–Aug/88:            | M.Math. (Computer Science, thesis option), University of Waterloo, Waterloo, Ontario, Canada   |
| Sep/83–Apr/87:            | B.Math. (Double Honours Computer Science and Applied Mathematics—<br>Dean's Honours List), University of Waterloo, Waterloo, Ontario, Canada |

## **3** Research and Work Experience

| Aug/18–present: | Associate Dean (Education), Faculty of Engineering, The Chinese University of Hong Kong, Hong Kong  |
|-----------------|---|
| Aug/18–Jul/19:  | Assistant Dean (Education), Faculty of Engineering, The Chinese University of Hong Kong, Hong Kong  |
| Aug/19-present: | Graduate Division Head, Graduate Division of Financial Technology, Faculty of Engineering, The Chinese University of Hong Kong, Hong Kong |
| Aug/18–Jul/19:  | Program Director, Master of Science in Financial Technology, Faculty of Engineering, The Chinese University of Hong Kong, Hong Kong       |
| Sep/14-present: | Associate Dean of Students, New Asia College, The Chinese University of Hong Kong, Hong Kong  |

Dec/12-present: Chair, Senate Committee on Student Discipline, The Chinese University of Hong Kong, Hong Kong Aug/04–present: Professor, Department of Computer Science and Engineering, The Chinese University of Hong Kong, Hong Kong Jan/12–Dec/20: Professor (by Courtesy), Department of Systems Engineering and Engineering Management, The Chinese University of Hong Kong, Hong Kong Aug/18: Visiting Professor, School of Computer Science, University of St. Andrews, Scotland, United Kingdom Aug/17–Oct/17: Visiting Professor, Department of Computing and Information Systems, The University of Melbourne, Melbourne, Australia Feb/16–Jun/16: Visiting Professor, Department of Computing and Information Systems, The University of Melbourne, Melbourne, Australia Program Co-Director, Master of Arts Programme in Information Tech-Sep/11-Jul/14:nology in Education, Hong Kong Institute for Educational Research, The Chinese University of Hong Kong, Hong Kong Sep/11-Dec/12: Director, Centre for the Advancement of IT in Education, Hong Kong Institute for Educational Research, The Chinese University of Hong Kong, Hong Kong Jul/11-Aug/11: Visiting Professor, GREYC, Université of Caen, France Aug/09–Aug/11: Co-Director, Centre for the Advancement of IT in Education, Hong Kong Institute for Educational Research, The Chinese University of Hong Kong, Hong Kong Aug/08-Jul/11: Graduate Division Head, Department of Computer Science and Engineering, The Chinese University of Hong Kong, Hong Kong Mav/05-Jul/09: Associate Director (Research and Development), Centre for the Advancement of IT in Education, Hong Kong Institute for Educational Research, The Chinese University of Hong Kong, Hong Kong Apr/05: Visiting Professor, Laboratoire d'Informatique Fondamentale d'Orléans, l'Université d'Orléans, Orléans, France Associate Professor, Department of Computer Science and Engineering, Aug/97–Jul/04: The Chinese University of Hong Kong, Hong Kong Aug/92–Jul/97: Assistant Professor, Department of Computer Science and Engineering, The Chinese University of Hong Kong, Hong Kong

## 4 Publications

### **Edited Volumes**

- Jimmy Lee (Editor), Proceedings of the 17th International Conference on Principles and Practice of Constraint Programming, 836 pages, LNCS 6876, Springer, Perugia, Italy, September, 2011
- J.H.M. Lee, T. Shih, Q. Wang, and Y. Zhao (Editors). Proceedings of the 11th Global Chinese Conference on Computers in Education (GCCCE'07), Volumes 1 & 2 (916 pages), Beijing Normal University Press, Quangzhou, China, May, 2007
- 3. Jimmy Lee, Akihiro Kashihara, Ben Chang, Judy Kay, Daniel Suthers, Tatsunori Matsui, Fu-Yun Yu, and Ryo Okamoto (Editors). Supplementary Proceedings: Workshop/Doctoral Students Consortium of the 15th International Conference on Computers in Education (ICCE'07), Volumes 1 & 2 (372 pages), Hiroshima, Japan, November, 2007

### **Book Chapters**

- Morris S.Y. Jong, Jimmy H.M. Lee and Junjie Shang. Educational Use of Computer Games: Where We Are, And What's Next. In Ronghuai Huang, Michael Spector & Kinshuk, Reshaping Learning - The Frontiers of Learning Technologies in Global Context, pages 299–320, Springer Verlag, 2013
- Junjie Shang, Morris Siu Yung Jong, Fong Lok Lee, and Jimmy Ho Man Lee. Problem Solving Processes and Strategies in the Virtual Interactive Student-Oriented Learning Environment. In H. Yang & S. Wang (Eds.), Cases on E-Learning Management: Development and Implementation, pages 223–239, IGI Global, 2012
- M.S.Y. Jong, J.J. Shang, F.L. Lee, and J.H.M. Lee. Constructivist learning through computer gaming. In M.R. Syed (Ed.), Technologies shaping instruction and distance education: New studies and utilization, pages 207–222, New York: Information Science Reference, 2010
- M.S.Y. Jong, J.J. Shang, F.L. Lee, and J.H.M. Lee. VISOLE—A constructivist pedagogical approach to game-based learning. In H. Yang, & S. Yuen (Eds.), Collective intelligence and e-learning 2.0: Implications of web-based communities and networking, pages 185–206, New York: Information Science Reference, 2010

#### **Refereed International Journals**

- 1. Jimmy Ho Man Lee. Story-Based Learning in a MOOC Course: An Experience to Share (in Chinese), *Research of Educational Communications and Technology*, 122:1-9, April, 2020
- 2. Jimmy Ho Man Lee. Story-Based Learning in a MOOC Course: An Experience to Share, Research of Educational Communications and Technology, 122:1–9, April, 2020
- 3. Jimmy H.M. Lee and Zichen Zhu. Towards Breaking More Composition Symmetries in Partial Symmetry Breaking, *Artificial Intelligence*, 252:51–82, November, 2017
- David Allouche, Christian Bessiere, Patrice Boizumault, Simon de Givry, Patricia Gutierrez, Jimmy H.M. Lee, Ka Lun Leung, Samir Loudni, Jean-Philippe Métivier, Thomas Schiex and Yi Wu. Tractability-preserving Transformations of Global Cost Functions, *Artificial Intelligence*, 238:166–189, September, 2016
- 5. Jimmy H.M. Lee, Pedro Meseguer and Wen Su. Adding Laziness in BnB-ADOPT+, CONSTRAINTS, 20(2):274–282, 2015
- Arnaud Lallouet, Jimmy H.M. Lee, Terrence W.K. Mak and Justin Yip. Ultra-Weak Solutions and Consistency Enforcement in Minimax Weighted Constraint Satisfaction, CONSTRAINTS, 20(2):109–154, 2015
- J.H.M. Lee, K.L. Leung and Y.W. Shum. Consistency Techniques for Polytime Linear Global Cost Functions in Weighted Constraint Satisfaction, CONSTRAINTS, 19(3):270– 308, 2014
- 8. Y.C. Law, J.H.M. Lee, T. Walsh and M.H.C. Woo. Multiset Variable Representations and Constraint Propagation, *CONSTRAINTS*, 18(3):307–343, 2013
- J.H.M. Lee and K.L. Leung. Consistency Techniques for Flow-Based Projection-Safe Global Cost Functions in Weighted Constraint Satisfaction, *Journal of Artificial Intelligence Research*, 43:257–292, 2012
- Morris S.Y. Jong, Weiqin Chen, Alex W.C. Tse, Fong-lok Lee, and Jimmy H.M. Lee. Using Posting Templates for Enhancing Students' Argumentative Elaborations in Computer-Supported Collaborative Inquiry Learning, *Research and Practice in Technology Enhanced Learning*, 5(3):275–294, 2010
- 11. Morris S.Y. Jong, Junjie Shang, Fong-lok Lee, and Jimmy H.M. Lee. An Evaluative Study on VISOLE—Virtual Interactive Student-Oriented Learning Environment, *IEEE Transactions on Learning Technologies*, 3(4):307–318, 2010

- Y.C. Law, J.H.M. Lee, and M.H.C. Woo. Redundant Modeling in Permutation Weighted Constraint Satisfaction Problems, CONSTRAINTS, 15(3):354-403, 2010
- 13. Stefano Bistarelli, Philippe Codognet, H.K.C. Hui, and J.H.M. Lee. Solving Finite Domain Constraint Hierarchies by Local Consistency and Tree Search, *Journal of Experimental and Theoretical Artificial Intelligence*, 21(4):233–257, 2009.
- Kevin K.F. CHEUNG, Morris S.Y. JONG, F.L. LEE, Jimmy H.M. LEE, Eric T.H. LUK, Junjie SHANG, and Marti K.H. WONG. FARMTASIA: an Online Game-based Learning Environment Based on the VISOLE Pedagogy, *Journal of Virtual Reality*, 12(1):17–25, 2008
- Junjie Shang, Morris S.Y. Jong, Fong-Lok Lee, and Jimmy H.M. Lee. Case Studies of Game-based Learning and Insights into Educational Games Design (in Chinese), *China Educational Technology*, 2, pages 65–71, 2008
- 16. Yuxia Zhou, Fong-Lok Lee, Jimmy H.M. Lee, and Junjie Shang. Play or Learn: Students' Cognition, Sentiments, Meaning, and Behavior in the Learning Villages Platform (in Chinese), Journal of Chinese Distance Learning Research, 1, 2008
- Morris S.Y. Jong, Junjie Shang, Fong-Lok Lee and Jimmy H.M. Lee. Harnessing Computer Games in Education: Why and How? International Journal of Distance Education Technologies, 6(1), pages 1-9, 2008
- Junjie Shang, Morris S.Y. Jong, Fong-Lok Lee, and Jimmy H.M. Lee. Motivation Strategies and Effectiveness of VISOLE (in Chinese), *Global Chinese Journal for Computers* in Education, 5(1–2), pages 72–84, 2007
- C.W. Choi, J.H.M. Lee, and P.J. Stuckey. Removing Propagation Redundant Constraints in Redundant Modeling, ACM Transactions on Computational Logic, 8(4), Article 23 (38 pages), 2007
- H. Fang, Y. Kilani, J.H.M. Lee, and P.J. Stuckey. The Island Confinement Method for Reducing Search Space in Constraint Satisfaction, *Journal of Heuristics*, 13(6), pages 557–585, 2007
- Y.C. Law, J.H.M. Lee, and B.M. Smith. Automatic Generation of Redundant Models for Permutation Constraint Satisfaction Problems, CONSTRAINTS, 12(4), pages 469– 505, 2007
- J.J. Shang, M.S.Y. Jong, F.L. Lee, J.H.M. Lee, and H.Y. Law. Computer Games in Education: A Comparative Study between Hong Kong and Beijing, *Journal of Compu*tational Information Systems, 2(2), pages 481-487, 2006

- Y.C. Law and J.H.M. Lee. Symmetry Breaking Constraints for Value Symmetries in Constraint Satisfaction, CONSTRAINTS, 11(2–3), pages 221–267, 2006
- 24. Jimmy Ho-Man Lee, Fong-Lok Lee, and Tai-Shing Lau. Folklore-based Learning on the Web—Pedagogy, Case Study and Evaluation, *Journal of Educational Computing Research*, 34(1), pages 1–27, 2006.
- Junjie Shang, Fong-Lok Lee, and Jimmy Ho-Man Lee. Light Game: The Future of the Digital Game-Based Learning (in Chinese), *Journal of e-Education Research*, 1, pages 24–26, 2005
- F.L. Lee, K.K. Lau, and J.H.M. Lee. Developing Global Chinese Web-based Learning Environment (in Chinese), *Global Chinese Journal on Computers in Education*, 1(1), pages 7–19, 2003
- 27. Fong-lok Lee, Jimmy Ho-man Lee, and Tai-shing Lau. Fantasy-based Learning on the Web—Tong Pak Fu and Chou Heung: the Probabilistic Fantasy, *Hong Kong Science Teachers' Journal*, 21(1), pages 10–14, 2003
- Xudong Luo, Nicholas R. Jennings, Nigel Shadbolt, Ho-fung Leung, and Jimmy Ho-man Lee. A Fuzzy Constraint Based Knowledge Model for Bilateral, Multi-Issue Negotiations in Competitive Environments, Artificial Intelligence, 148(1–2), pages 53–102, 2003
- Xudong Luo, Jimmy Ho-man Lee, Ho-fung Leung, and Nicholas R. Jennings. Prioritised Fuzzy Constraint Satisfaction Problems: Axioms, Instantiation and Validation, *Fuzzy* Sets and Systems, 136(2), pages 155–188, Elsevier Science Ltd, 2003
- C.K. Chiu and J.H.M. Lee. Efficient Interval Linear Equality Solving in Constraint Logic Programming, *Reliable Computing*, 8(2), pages 139–174, Kluwer Academic Publishers, 2002
- C.K. Chiu, C.M. Chou, J.H.M. Lee, H.F. Leung, and Y.W. Leung. A Constraint-Based Interactive Train Rescheduling Tool, *CONSTRAINTS*, 7(2), pages 167–198, Kluwer Academic Publishers, 2002
- K.M.F. Choi, J.H.M. Lee, and P.J. Stuckey. A Lagrangian Reconstruction of GENET, Artificial Intelligence, 123(1-2), pages 1–39, Elsevier Science Ltd, 2000
- 33. J.H.M. Lee and H.F. Leung. An Execution Scheme for Interactive Problem-Solving in Concurrent Constraint Logic Programming Languages, Computer Languages, 25(3), pages 119–144, Elsevier Science Ltd, 2000
- 34. B.M.W. Cheng, K.M.F. Choi, J.H.M. Lee, and J.C.K. Wu. Increasing Constraint Propagation by Redundant Modeling: an Experience Report, *CONSTRAINTS*, 4, pages 167–192, Kluwer Academic Publishers, 1999

- C.K. Chiu and J.H.M. Lee. Extending HCLP with Partially Ordered Hierarchies and Composite Constraints, *Journal of Experimental and Theoretical Artificial Intelligence*, 10, pages 5–24, Taylor & Francis Ltd, 1998
- B.M.W. Cheng, J.H.M. Lee, and J.C.K. Wu. A Nurse Rostering System Using Constraint Programming and Redundant Modeling, *IEEE Transactions on Information Technology in Biomedicine*, 1, pages 44–54, IEEE Publishers, 1997
- J.H.M. Lee and P.K.C. Pun. Object Logic Integration: a Multiparadigm Design Methodology and a Programming Language, Computer Languages, 23, pages 25–42, Elsevier Science Ltd, 1997
- J.H.M. Lee and V.W.L. Tam. A Framework for Integrating Artificial Neural Networks and Logic Programming, *International Journal on Artificial Intelligence Tools*, 4(1&2), pages 3–32, World Scientific, June, 1995
- J.H.M. Lee and M.H. van Emden. Interval Computation as Deduction in CHIP, Journal of Logic Programming, 16(3&4), pages 255-276, North-Holland, May, 1993

#### **Refereed International Conferences**

- 1. Jimmy H.M. Lee and Allen Z. Zhong. Automatic Dominance Breaking for a Class of Constraint Optimization Problems, (to appear) Proceedings of the 29th International Joint Conference on Artificial Intelligence and the 17th Pacific Rim International Conference on Artificial Intelligence (IJCAI-PRICAI 2020), Yokohama, Japan, July, 2020
- Hongbo Li, Jimmy H.M. Lee, He Mi and Minghao Yin. Finding Good Subtrees for Constraint Optimization Problems Using Frequent Pattern Mining, *Proceedings of the* 34th AAAI Conference on Artificial Intelligence (AAAI-20), pages 1577–1584, New York, USA, February, 2020
- 3. Mavis Chan, Cecilia Chun, Holly Fung, Jimmy H.M. Lee and Peter J. Stuckey. Teaching Constraint Programming Using Fable-Based Learning, *Proceedings of the 10th Symposium on Educational Advances in Artificial Intelligence (EAAI-20) (Collocated with AAAI-20)*, pages 13366–13373, New York, USA, February, 2020
- 4. Xuming Huang and Jimmy Lee. DoubleLex Revisited and Beyond, Proceedings of the 28th International Joint Conference on Artificial Intelligence (IJCAI 2019), pages 1101–1107, Macao, China, August, 2019
- Jasper C.H. Lee, Jimmy H.M. Lee and Allen Z. Zhong. Augmenting Stream Constraint Programming with Eventuality Conditions, Proceedings of the 24th International Conference on Principles and Practice of Constraint Programming (CP-18), pages 242–258, Lille, France, August, 2018

- Jimmy Lee and Zichen Zhu. Static Symmetry Breaking with the Reflex Ordering, Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI-16), pages 758–765, New York City, USA, July, 2016
- Jimmy Lee and Zichen Zhu. Breaking More Composition Symmetries Using Search Heuristics, Proceedings of the 30th AAAI Conference on Artificial Intelligence (AAAI 2016), pages 3418–3425, Phoenix, Arizona, USA, February, 2016
- 8. Jimmy Lee, Christian Schulte and Zichen Zhu. Increasing Nogoods in Restart-Based Search, *Proceedings of the 30th AAAI Conference on Artificial Intelligence (AAAI 2016)*, pages 3426–3433, Phoenix, Arizona, USA, February, 2016
- Jimmy H.M. Lee and Zichen Zhu. Filtering Nogoods Lazily in Dynamic Symmetry Breaking During Search, Proceedings of the 24th International Joint Conference on Artificial Intelligence (IJCAI 2015), pages 339–345, Buenos Aires, Argentina, July, 2015
- Jasper Lee and Jimmy Lee. Towards Practical Infinite Stream Constraint Programming: Applications and Implementation, Proceedings of the 20th International Conference on Principles and Practice of Constraint Programming (CP 2014), pages 449-464, Lyon, France, September, 2014
- Simon De Givry, Jimmy Lee, Ka Lun Leung and Yu Wai Shum. Solving a Judge Assignment Problem Using Conjunctions of Global Cost Functions, Proceedings of the 20th International Conference on Principles and Practice of Constraint Programming (CP 2014), pages 797–812, Lyon, France, September, 2014
- Jimmy Lee and Zichen Zhu. An Increasing-Nogoods Global Constraint for Symmetry Breaking During Search, Proceedings of the 20th International Conference on Principles and Practice of Constraint Programming (CP 2014), pages 465-480, Lyon, France, September, 2014
- Jimmy H.M. Lee and Zichen Zhu. Boosting SBDS for Partial Symmetry Breaking in Constraint Programming, Proceedings of the Twenty-Eighth Conference on Artificial Intelligence (AAAI-14), pages 2695–2702, Quebec City, Quebec, Canada, July, 2014
- Jimmy H.M. Lee and Yuxiang Shi. Removing Redundant Conflict Value Assignments in Resolvant Based Nogood Learning, Proceedings of 13th International Conference on Autonomous Agents and Multiagent Systems (AAMAS-14), pages 1133–1140, Paris, France, May, 2014
- Jimmy H.M. Lee, Terrence W.K. Mak and Yuxiang Shi. A General Privacy Loss Aggregation Framework for Distributed Constraint Reasoning, *Proceedings of 25th IEEE International Conference on Tools with Artificial Intelligence (ICTAI-13)*, pages 979– 986, Washington DC, USA, November, 2013

- Patricia Gutierrez, Jimmy H.M. Lee, Ka Man Lei, Terrence W.K. Mak and Pedro Meseguer. Maintaining Soft Arc Consistencies in BnB-ADOPT+ During Search, Proceedings of the 19th International Conference on Principles and Practice of Constraint Programming (CP-13), pages 365–380, Uppsala, Sweden, September, 2013
- J.H.M. Lee and T.W.K. Mak. A Value Ordering Heuristic for Solving Ultra-Weak Solutions in Minimax Weighted CSPs, Proceedings of the 24th IEEE International Conference on Tools with Artificial Intelligence (ICTAI-12), pages 17–24, Athens, Greece, November, 2012
- J.H.M. Lee, K.L. Leung, and Y.W. Shum. Propagating Polynomially (Integral) Linear Projection-Safe Global Cost Functions in WCSPs, *Proceedings of the 24th IEEE International Conference on Tools with Artificial Intelligence (ICTAI-12)*, pages 9–16, Athens, Greece, November, 2012
- Morris S.Y. Jong, Eric T.H. Luk, and Jimmy H.M. Lee. An Integrated GPS-supported Outdoor Exploratory Educational System—EagleEye, *Proceedings of the 20th International Conference on Computers in Education (ICCE-12)*, pages 338–345, Singapore, November, 2012
- A. Lallouet, J.H.M. Lee, and T.W.K. Mak. Consistencies for Ultra-Weak Solutions in MWCSPs Using the Duality Principle, *Proceedings of the Eighteenth International Conference on Principles and Practice of Constraint Programming (CP-12)*, pages 373– 389, Quebec City, Canada, October, 2012
- J.H.M. Lee and J.Y. Li. Increasing Symmetry Breaking by Preserving Target Symmetries, Proceedings of the Eighteenth International Conference on Principles and Practice of Constraint Programming (CP-12), pages 422–438, Quebec City, Canada, October, 2012
- 22. J.H.M. Lee, K.L. Leung and Y. Wu. Polynomially Decomposable Global Cost Functions in Weighted Constraint Satisfaction, *Proceedings of the Twenty-Sixth AAAI Conference* on Artificial Intelligence (AAAI-12), pages 507–513, Toronto, Canada, July, 2012
- Jimmy H.M. Lee, Terrence W.K. Mak, and Justin Yip. Weighted Constraint Satisfaction Problems with Min-Max Quantifiers, *Proceedings of the 23rd IEEE International Conference on Tools with Artificial Intelligence (ICTAI-11)*, pages 769–776, Florida, USA, November, 2011
- J.H.M. Lee and Y.W. Shum. Modeling Soft Global Constraints as Linear Programs in Weighted Constraint Satisfaction, Proceedings of the 23rd IEEE International Conference on Tools with Artificial Intelligence (ICTAI-11), pages 305–312, Florida, USA, November, 2011

- Y.C. Law, J.H.M. Lee, M.H.W. Woo, and T. Walsh. A Comparison of Lex Bounds for Multiset Variables in Constraint Programming, *Proceedings of the Twenty-Fifth Con*ference on Artificial Intelligence (AAAI-11), pages 61–67, San Francisco, USA, August, 2011
- A. Lallouet, Y.C. Law, J.H.M. Lee, and C.F.K. Siu. Constraint Programming on Infinite Data Streams, Proceedings of the 22nd International Joint Conference on Artificial Intelligence (IJCAI 2011), pages 597–604, Barcelona, Spain, July, 2011
- Morris S.Y. Jong, Junjie Shang, Fong-lok Lee, and Jimmy H.M. Lee. A Case Study of an Academic Achievement-oriented Student in Game-based Learning, Proceedings of the 11th IEEE International Conference on Advanced Learning Technologies (ICALT 2011), pages 7–11, Athens, Georgia, July, 2011
- Morris S.Y. Jong, Junjie Shang, Fong-lok Lee, and Jimmy H.M. Lee. The Significance of Emotional Support to Students in Game-based Learning, *Proceedings of the 18th International Conference on Computers in Education (ICCE'10)*, pages 525–532, Putrajaya, Malaysia, November, 2010
- J.H.M. Lee and K.L. Leung. A Stronger Consistency for Soft Global Constraints in Weighted Constraint Satisfaction, Proceedings of the Twenty-Fourth AAAI Conference on Artificial Intelligence (AAAI'10), pages 121–127, Atlanta, USA, July, 2010
- Morris S.Y. Jong, Junjie Shang, Fong-lok Lee, and Jimmy H.M. Lee. A Case Study of a Non-Gamer Student's Learning Process in VISOLE, Proceedings of the 3rd IEEE International Conference on Digital Game and Intelligent Toy Enhanced Learning, pages 77–84, Koahsiung, Taiwan, April, 2010
- J.H.M. Lee and K.L. Leung. Towards Efficient Consistency Enforcement for Global Constraints in Weighted Constraint Satisfaction, Proceedings of the Twenty-First International Joint Conference on Artificial Intelligence (IJCAI'09), pages 559–565, Pasadena, California, USA, July, 2009
- Y.C. Law, J.H.M. Lee, and M.H.C. Woo. Variety Reasoning for Multiset Constraint Propagation, Proceedings of the Twenty-First International Joint Conference on Artificial Intelligence (IJCAI'09), pages 552–558, Pasadena, California, USA, July, 2009
- 33. J.J. Shang, M. Jong, F.L. Lee, and J.H.M. Lee. Problem Solving Process and Strategies in the Virtual Interactive Student-Oriented Learning Environment (in Chinese), Proceedings of the 13th Global Chinese on Computers in Education Conference (GCCCE 2009), pages 150–158, Taipei, Taiwan, May, 2009
- 34. Morris S.Y. Jong, Alex W.C. Tse, Yuxia Zhou, Weiqin Chen, Fong-lok Lee, Jimmy H.M. Lee. Using Posting Templates for Enhancing Students' Argumentative Elaborations in

Learning Villages, Proceedings of the 2nd IEEE International Conference on Digital Game and Intelligent Toy Enhanced Learning (DIGITEL 2008), pages 180–187, Banff, Canada, November, 2008

- 35. J.H.M. and F.K. Siu. Stronger Consistencies in WCSPs with Set Variables, *Proceedings* of the 20th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2008), pages 291–298, Dayton, Ohio, USA, November, 2008
- 36. M. Jong, J.J. Shang, F.L. Lee, and J.H.M. Lee. Teachers' Concerns about the Implementation of the VISOLE Pedagogy, *Proceedings of the 16th International Conference* on Computers in Education (ICCE-2008), 8 pages (electronic proceedings), Taipei, Taiwan, October, 2008
- J.J. Shang, M.S.Y. Jong, F.L. Lee, and J.H.M. Lee. VISOLE: An Example of Hybrid Learning, Proceedings of the First International Conference on Hybrid Learning 2008 (ICHL 2008), pages 348–358, LNCS 5169, Hong Kong, August, 2008
- Y.C. Law, J.H.M. Lee, and M.H.C. Woo. A Parameterized Local Consistency for Redundant Modeling in Weighted CSPs, *Proceedings of the 20th Australian Joint Conference on Artificial Intelligence (AI 2007)*, pages 191–201, LNAI 4830, Gold Coast, Queensland, Australia, December, 2007
- Y.C. Law, J.H.M. Lee, T. Walsh, and J.Y.K. Yip. Breaking Symmetry of Interchangeable Variables and Values, *Proceedings of the Thirteenth International Conference on Principles and Practice of Constraint Programming (CP'07)*, pages 423–437, LNCS 4741, Providence, Rhode Island, USA, September, 2007
- 40. C.W. Choi and J.H.M. Lee. Solving the Salinity Control Problem in a Potable Water System, (Applications Track) Proceedings of the Thirteenth International Conference on Principles and Practice of Constraint Programming (CP'07), pages 33–48, LNCS 4741, Providence, Rhode Island, USA, September, 2007
- M. Jong, J.J. Shang, E.T.H. Luk, K.K.F. Cheung, F.K.Y. Ng, F.L. Lee, and J.H.M. Lee. Teachers' Perceptions of Harnessing VISOLE for Learning and Teaching, *Proceedings* of the 11th Global Chinese Conference on Computers in Education (GCCCE'07), pages 392–399, Quangzhou, China, May, 2007.
- 42. J.J. Shang, M. Jong, F.L. Lee, and J.H.M. Lee. Motivation Strategies and Effectiveness of VISOLE (in Chinese), *Proceedings of the 11th Global Chinese Conference on Computers in Education (GCCCE'07)*, pages 368–375, Quangzhou, China, May, 2007.
- 43. Junjie Shang, Morris Siu Yung Jong, Fong Lok Lee, and Jimmy Ho Man Lee. A Pilot Study on Virtual Interactive Student-Oriented Learning Environment, Proceedings of the First International Workshop on Digital Game and Intelligent Toy Enhanced Learning, IEEE, March, Taiwan, 2007

- 44. Y.C. Law, J.H.M. Lee, and M.H.C. Woo. Speeding up Weighted Constraint Satisfaction using Redundant Modeling, *Proceedings of the 19th Australian Joint Conference* on Artificial Intelligence (AI 2006), pages 59–68, LNAI 4304, December, Tasmania, Australia, 2006
- C. W. Choi, W. Harvey, J.H.M. Lee, and P.J. Stuckey. Finite Domain Bounds Consistency Revisited, Proceedings of the 19th Australian Joint Conference on Artificial Intelligence (AI 2006), pages 49–58, LNAI 4304, December, Tasmania, Australia, 2006
- 46. Junjie Shang, Morris S.Y. Jong, Fong-Lok Lee, Jimmy H.M. Lee, Marti K.H. Wong, Eric T.H. Luk, Kevin K.F. Cheung. Using the "Record-Replay" Function for Elaboration of Knowledge in Educational Games, *Proceedings of the 14th International Conference on Computers in Education (ICCE-2006)*, pages 503–506, Beijing, China, December, 2006
- 47. Morris S.Y. Jong, Junjie Shang, Fong-Lok Lee, Jimmy H.M. Lee, Huk-Yuen Law. An Exploratory Study on Teachers' Perceptions of Game-based Situated Learning, Proceedings of the 14th International Conference on Computers in Education (ICCE-2006), pages 525–532, Beijing, China, December, 2006
- J.H.M. Lee and C.F.K. Siu. Weighted Constraint Satisfaction with Set Variables, Proceedings of the Twenty-First National Conference on Artificial Intelligence (AAAI'06), pages 80–85, Boston, Massachusetts, USA, July, 2006
- 49. Junjie Shang, Morris S.Y. Jong, Fong-Lok Lee, Jimmy H.M. Lee. An Empirical Study on On-line Game Players' Motivation (in Chinese), *Proceedings of the Tenth Global Chinese Conference on Computers in Education*, 13 pages (CD-ROM Proceedings), June, Beijing, China, 2006
- 50. Morris S.Y. Jong, Junjie Shang, Fong-Lok Lee, Jimmy H.M. Lee. Two Critical Teacher Facilitating Tasks in VISOLE: Scaffolding and Debriefing, *Proceedings of the Tenth Global Chinese Conference on Computers in Education*, 5 pages (CD-ROM Proceedings), June, Beijing, China, 2006
- S.K.L. Fung, J.H.M. Lee, and H.F. Leung. Incorporating Simplex Method into Guided Complete Search: An Application to the Nurse Rostering Problem, *Proceedings of the* 19th International FLAIRS Conference, pages 141–146, May, Melbourne Beach, Florida, U.S.A., 2006
- 52. E.T.H. Luk, M.K.H. Wong, K.K.F. Cheung, F.L. Lee, and J.H.M. Lee. Design and Implementation of Farmtasia: a game designed for the VISOLE Teaching Style, Proceedings of the Edutainment 2006 International Conference on E-learning and Games, LNCS 3942, pages 566-571, April, Hangzhou, China, 2006

- 53. Fong-Lok Lee, Jimmy Ho-Man Lee, Kwok-Hung Wong, Huk-Yuen Law, and Lu Wang. Exploring the Fourth Dimension: The Design of a Multimedia Learning System for Generalization, Proceedings of the Edutainment 2006 International Conference on Elearning and Games, LNCS 3942, pages 261–270, April, Hangzhou, China, 2006
- 54. M.S.Y. Jong, F.L. Lee, J.H.M. Lee, J.J. Shang, and H.Y. Law. Learning Online: A Comparative Study of a Situated Game-based Approach and a Traditional Web-based Approach, *Proceedings of the Edutainment 2006 International Conference on E-learning* and Games, LNCS 3942, pages 541–551, April, Hangzhou, China, 2006
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- C.W. Choi and J.H.M. Lee. Controlling Salinity in a Potable Water Supply System Using a Constraint Programming Approach, *Proceedings of the 17th IEEE International Conference on Tools with Artificial Intelligence (ICTAI 2005)*, pages 104–108, November, Hong Kong, 2005
- 57. Junjie Shang, Fong-Lok Lee, and Jimmy Ho-Man Lee. Design Strategies and Principles in VISOLE, Proceedings of the 13th International Conference on Computers in Education (ICCE 2005), pages 879–882, November, Singapore, 2005
- 58. Lok-Yin Chiu, Tsun-Hin Luk, Jimmy Ho Man Lee, Fong-Lok Lee, Yee Leung, and Kwai-Cheong Chau. Virtual Interactive Student-Oriented Learning Environment (VISOLE)— A New Web-based learning Paradigm, Proceedings of the Ninth Global Chinese Conference on Computers in Education (GCCCE'2005), pages 834–837, Hawaii, USA, June, 2005
- 59. Junjie Shang, Fong-Lok Lee, Jimmy Ho-Man Lee, Yee Leung, and Kwai-Cheong Chau. The Intrinsic Motivation of the Online Game and its Application in VISOLE, Proceedings of the Ninth Global Chinese Conference on Computers in Education (GC-CCE'2005), pages 649–653, Hawaii, USA, June, 2005
- Junjie Shang, Fong-Lok Lee, and Jimmy Ho-Man Lee. Light Game: The Future of the Digital Game-Based Learning, Proceedings of the 16th annual conference of the Society for Information Technology and Teacher Education, pages 722–725, Phoenix, Arizona, USA, March, 2005
- 61. Fong-Lok Lee, Sai-Wing Pun, Ho-Man Lee, and Harrison Yang. Effectiveness of Using Concept Mapping for Inquiry-based Project Design and Development, Proceedings of the 16th annual conference of the Society for Information Technology and Teacher Education, pages 1717–1722, Phoenix, Arizona, USA, March, 2005

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- Y.C. Law and J.H.M. Lee. Global Constraints for Integer and Set Value Precedence, Proceedings of the Tenth International Conference on Principles and Practice of Con- straint Programming, Springer-Verlag, LNCS 3258, pages 362–376, Toronto, Canada, September, 2004
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- K.C.K. Cheng, J.H.M. Lee, and P.J. Stuckey. Box Constraint Collections for Adhoc Constraints, Proceedings of the Ninth International Conference on Principles and Practice of Constraint Programming, pages 214–228, Springer-Verlag, LNCS 2833, Kinsale, Ireland, September, 2003
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- K.C.K. Cheng, J.H.M. Lee, and P.J. Stuckey. Efficient Representation of Adhoc Constraints, Proceedings of the Eighteenth International Joint Conference on Artificial Intelligence, pages 1368–1369, Acapulco, Mexico, August, 2003
- 70. Stefano Bistarelli, Philippe Codognet, H.K.C. Hui, and J.H.M. Lee. Solving Finite Domain Constraint Hierarchies by Local Consistency and Tree Search, Proceedings of the Eighteenth International Joint Conference on Artificial Intelligence, pages 1364– 1365, Acapulco, Mexico, August, 2003

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- 74. F.L. Lee, K.K. Lau, and J.H.M. Lee. (invited talk) Web-based Education in the Chinese Community (in Chinese), *Proceedings of the Sixth Global Chinese Conference on Computers in Education '02*, Beijing, China, June, 2002
- 75. Y.C. Law and J.H.M. Lee. Model Induction: a New Source of CSP Model Redundancy, Proceedings of the Eighteenth National Conference on Artificial Intelligence (AAAI'02), pages 54–60, Edmonton, Canada, July, 2002
- 76. H. Fang, Y. Kilani, J.H.M. Lee, and P.J. Stuckey. Reducing Search Space in Local Search for Constraint Satisfaction, *Proceedings of the Eighteenth National Conference* on Artificial Intelligence (AAAI'02), pages 28–33, Edmonton, Canada, July, 2002
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- Xudong Luo, Jimmy Ho-man Lee and Ho-fung Leung. A Spectrum of Compensation Aggregation Operators, Proceedings of the 10th International Conference on Fuzzy Systems, pages 1171–1174, Melbourne, Australia, December, 2001
- 79. Xudong Luo, Ho-fung Leung and Jimmy Ho-man Lee. Theory and Properties of a Selfish Protocol for Multi-Agent Meeting Scheduling Using Fuzzy Constraints, 14th European Conference on Artificial Intelligence, pages 373–377, Berlin, Humboldt University, Germany, August, 2000
- Xudong Luo, Ho-fung Leung and Jimmy Ho-man Lee. Collaborating Agents of Heterogeneous Valued Constraint Satisfaction Problems, *ISCA 9th International Conference* on Intelligent Systems, pages 35–38, Louisville, Kentucky, USA, June, 2000

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- J.H.M. Lee, H.F. Leung, and H.W. Won. Performance of a Comprehensive and Efficient Constraint Library Based on Local Search, 11th Australian Joint Conference on Artificial Intelligence, pages 191–202, Springer-Verlag, LNAI 1502, Brisbane, Australia, July, 1998
- J.H.M. Lee and P.K.C. Pun. The OLI Multiparadigm Programming Language and Its Semantics, Third International Conference on Object-Oriented Information Systems, pages 79–92, Springer-Verlag, London, U.K., December, 1996
- J.H.M. Lee, H.F. Leung, P.J. Stuckey, V.W.L. Tam, and H.W. Won. Using Stochastic Methods to Guide Search in CLP: a Preliminary Report, 1996 Asian Computing Science Conference, pages 43–52, Springer-Verlag, LNCS 1179, Singapore, December, 1996
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- C.K. Chiu, C.M. Chou, J.H.M. Lee, H.F. Leung, and Y.W. Leung. A Constraint-Based Interactive Train Rescheduling Tool, Second International Conference on Principles and Practice of Constraint Programming, pages 104–118, Springer-Verlag, LNCS 1118, Cambridge, Massachusetts, USA, August, 1996

- J.H.M. Lee and H.F. Leung. Incremental Querying in the Concurrent CLP Language IFD-Constraint Pandora, 1996 ACM Symposium on Applied Computing, pp.387–392, ACM Press, Philadelphia, Pennsylvania, USA, February, 1996
- 92. J.H.M. Lee and P.K.C. Pun. Object Logic Integration: a Scheme for Multiparadigm Design and Programming, Eighteenth International Conference and Exhibition on Technology of Object-Oriented Languages and Systems, pp.265–278, Prentice Hall, Melbourne, Australia, November, 1995
- 93. J.H.M. Lee, H.F. Leung, and H.W. Won. Extending GENET for Non-Binary CSP's, Seventh IEEE International Conference on Tools with Artificial Intelligence, IEEE Computer Society Press, pp.338–343, Washington DC, USA, November, 1995
- C.K. Chiu and J.H.M. Lee. Interval Linear Constraint Solving Using the Preconditioned Interval Gauss-Seidel Method, *Twelfth International Conference on Logic Programming*, pp.17–32, MIT Press, Kanagawa, Japan, June, 1995
- 95. J.H.M. Lee, J.C.K. Leung, and C.C.K. Wong. Construction of a WYSIWYG LATEX Typesetting System using Object-oriented Design, First IFIP/SQI International Conference on Software Quality and Productivity: theory, practice, education and training, pp.135– 138, Chapman & Hall, Hong Kong, December, 1994
- 96. C.K. Chiu and J.H.M. Lee. Towards Practical Interval Constraint Solving in Logic Programming, Logic Programming: Proceedings of the 1994 International Symposium, pp.109–123, MIT Press, Ithaca, USA, November, 1994
- 97. J.H.M. Lee and T.W. Lee. A WAM-Based Abstract Machine for Interval Constraint Logic Programming, Sixth IEEE International Conference on Tools with Artificial Intelligence, pp.122–128, IEEE Computer Society Press, New Orleans, USA, November, 1994
- 98. J.H.M. Lee and V.W.L. Tam. Towards the Integration of Artificial Neural Networks and Constraint Logic Programming, Sixth IEEE International Conference on Tools with Artificial Intelligence, pp.446–453, IEEE Computer Society Press, New Orleans, USA, November, 1994
- 99. J.H.M. Lee. A Fault Simulator in Prolog: a Software Re-engineering Experience, 7th Exhibition and Symposium on Industrial Applications of Prolog, pp.51–58, INAP Press, Kawasaki, Japan, October, 1994
- 100. J.H.M. Lee and H.F. Leung. IQ: Towards Incremental Query Processing in Non-Deterministic Concurrent Constraint Logic Programming, 1994 ACM Symposium on Applied Computing, pp.405–409, ACM Press, Phoenix, USA, March, 1994

- 101. J.H.M. Lee and M.H. van Emden. Pruning Search Trees by Cylindrical Closures, *IEEE Pacific Rim Conference on Communications, Computers and Signal Processing*, pp.751-756, IEEE Computer Society Press, Victoria, Canada, May, 1993.
- 102. J.H.M. Lee and M.H. van Emden. Adapting CLP(*R*) to Floating-Point Arithmetic, International Conference on Fifth Generation Computer Systems 1992, Tokyo, Japan, pp.996–1003, June, 1992
- 103. M.H.M. Cheng, M.H. van Emden, and J.H.M. Lee. Tables as a User Interface for Logic Programs, *International Conference on Fifth Generation Computer Systems 1988*, Tokyo, Japan, pp.784–791, November, 1988

#### Patents

- 1. Irwin King, Jimmy Ho-Man Lee, Patrick Lau, Chi Chung Mak, and Chi Chung Chan, *The Chinese University Plagiarism IDentification Engine (CUPIDE)*, Taiwan Patent No. I 368144, 2012.
- 2. Irwin King, Jimmy Lee, Tak Pang Lau, Chi Chung Mak and Chi Chung Chan. Systems and Methods for Detecting Similarity of Documents, Singapore patent 200804446-3, May 31, 2011.
- 3. Irwin King, Jimmy Lee, Tak Pang Lau and Chi Chung Mak. A System for Determining Plagiarism of Files and a Method Thereof, HK1123108, Hong Kong SAR, 2011.01.21
- Irwin King, Jimmy Lee, Tak Pang Lau, Chi Chung Mak and Chi Chung Chan. Sistema e método para detecção de similaridade dos documentos, Macao Patent J/527, Macau, 2010.09.21
- 5. Irwin King, Jimmy Ho-Man Lee, Patrick Lau, Chi Chung Mak, and Chi Chung Chan, *The Chinese University Plagiarism IDentification Engine (CUPIDE)*, Hong Kong Patent No. 09100342.6, 2010.
- 6. Irwin King, Jimmy Ho-Man Lee, Patrick Lau, Chi Chung Mak, and Chi Chung Chan, *The Chinese University Plagiarism IDentification Engine (CUPIDE)* (in Chinese), Chinese Patent No. 200710105835.3, 2010.

#### **Research Grants and Contracts**

1. Prototype Software Development for a Delivery Robot, Principal Investigator, Rice Robotics Limited, 2019-20, HK\$800,000

- 2. Fable-based Learning for Learning Discrete Optimization. Principal Investigator, Micro-Module Courseware Development Grant, CUHK, 2017–2018, HK\$100,000
- 3. Dynamic Symmetry Breaking in Constraint Satisfaction Revisited. Principal Investigator, Direct Grant from Engineering Panel, CUHK, 2017–2018, HK\$150,000
- 4. International Consortium for Optimization of Soybean Cultivation, Co-Investigator (with Hon-Ming Lam and Amos Tai), Vice-Chancellor Discretionary Fund (CUHK), 2015–2020, HK\$2,000,000
- 5. *Modeling Issues in Distributed Constraint Programming: From Theory to Practice*, Principal Investigator, RGC General Research Fund, Research Grants Council (Hong Kong), 2014–2016, HK\$645,500
- Design-based Research on Teacher Facilitation in Constructivist Online Game-based Learning in Formal School Education, Co-Investigator (with PI Morris Jong and Co-Is Shang Junjie, Vincent Tam and Lucy Huang), RGC General Research Fund, Research Grant Council (Hong Kong), 2014–2016, HK\$391,000
- 7. Towards a Practical Library of Global Cost Functions in Weighted Constraint Networks, Principal Investigator, PROCORE-France/Hong Kong Joint Research Scheme, 2013– 2014, HK\$45,000
- 8. Integration of Free e-Learning Apps and Mobile Devices to Enhance the Effectiveness of Learning and Teaching of Measures, Shape and Space Dimension in Secondary School Mathematics, Co-Investigator (with PI Morris Jong and Co-I Tom Chan), RTC Courses, Education Bureau, 2012–2013, HK\$350,000
- Pedagogical Design and Implementation of Mobile GPS-based Outdoor Exploratory Learning and Teaching Activities in Primary and Secondary Schools, Co-Investigator (with PI Morris Jong and Co-I Tom Chan), RTC Courses, Education Bureau, 2012–2013, HK\$455,400
- Promoting Junior Secondary Students? Motivation and Skills in Issue-enquiry through Inter-school Game-based Collaborative Learning, Co-Investigator (with PI Morris Jong, and Co-Is Chi-shing Tse and Tom Chan), Knowledge Transfer Fund, Research Grant Council, 2012–2013, HK\$240,000
- Effective Use of Google Sketchup to Enhance the Quality of Learning and Teaching of Geometry in Secondary Schools, Co-Investigator (with PI Morris Jong), RTC Courses, Education Bureau, 2012, HK\$240,000
- 12. Modeling Distributed Constraint Satisfaction and Optimization Problems, Principal Investigator, CSIC/RGC Joint Research Scheme, 2012–2014, HK\$48,600

- 13. Using Free Web-based Applications for Learning and Teaching with Focuses on Projectbased Learning (PBL) and Independent Enquiry Study (IES), Co-Investigator (with PI Morris Jong), RTC Courses, Education Bureau, 2011–2012, HK\$300,000
- Design and Use of WebQuest—Developing Secondary School Science Students' Information Processing Skills through School-based Assessment Tasks Using WebQuest Platform, Co-Principal investigator (with Morris Jong), Education Bureau, 2010–2011, HK\$495,000
- 15. Game-based Collaborative Inquiry Learning between Hong Kong and Beijing Primary Schools, Co-Investigator (with PI Morris Jong and Co-I Fong-Lok Lee), Quality Education Fund (Hong Kong), 2010–2011, HK\$599,000
- Soft Global Constraints in Weighted Constraint Satisfaction: Properties, Algorithms, and Applications, Principal investigator (with Y.C. Law), RGC General Research Fund, Research Grant Council (Hong Kong), 2011–2014, HK\$1,302,807
- Constraint Satisfaction with Cost Conditioning Reduced Ordered Binary Decision Diagrams (CC-ROBDD): Definitions, Properties, and Algorithms, Principal investigator (with Peter Stuckey and Y.C. Law), RGC Earmarked Grant, Research Grant Council (Hong Kong), 2008–2011, HK\$491,906
- Set Variables in Constraint Satisfaction Revisited, Principal investigator (with Peter Stuckey and Y.C. Law), RGC Earmarked Grant, Research Grant Council (Hong Kong), 2006–2008, HK\$609,391
- A Compiler for High Performance Computing on Array Technologies, Co-Investigator (with Philip Leong), Hong Kong Innovation and Technology Fund (Tier 3), 2007–2008, HK\$805,943
- Project-based Learning with Learning Villages among schools in the Mainland, Hong Kong and the USA, Co-Principal Investigator (with F.L. Lee), Quality Education Fund (Hong Kong), 2006–2007, HK\$701,800
- A Web-based Platform for Mathematics Knowledge Diagnostic Testing for Engineering Freshmen, Co-Principal Investigator (with L.W. Chan and Will Ng—Department of Information Engineering), Teaching Development Grants for 2005-08 Triennuium, The Chinese University of Hong Kong, 2005-2006, HK\$219,300
- 22. Breaking Symmetries of Indistinguishable Values in Constraint Satisfaction, Principal investigator, RGC Earmarked Grant from the Research Grant Council (Hong Kong), 2006–2008, HK\$692,480
- 23. Study for Optimization of Operation during the Salinity Period, Principal investigator, The Macao Water Supply Co. Ltd., 2004-2006, HK\$191,100 (US\$24,500)

- 24. Utilizing Useful Redundancy Information to Increase Search Efficiency in Constraint Satisfaction, Principal investigator (with P.J. Stuckey—University of Melbourne), RGC Earmarked Grant from the Research Grant Council (Hong Kong), 2005–2007, HK\$339,414
- 25. Problem Generation Platform, Co-principal investigator (with Kenneth Young—Dept of Physics), Teaching Development Grant, The Chinese University of Hong Kong, 2003, HK\$20,000
- 26. From Flatland to Spaceland: the Higher Dimensional Space Odyssey, Co-principal investigator (with Wang Lu—Capital Normal University, Zhang Jing Zhong—Capital Normal University, F.L. Lee—Dept of Curriculum and Instruction), Key Technology Education Project grant, Beijing City Natural Science Foundation and Beijing Municipal Education Commission, 2004-2006, RMB\$200,000
- Efficient Local Search Methods for Soft Constraint Satisfaction Problems, Co-principal investigator (with P. Codognet—University of Paris 6), France/Hong Kong Joint Research Scheme, 2003-2004, HK\$61,200
- 28. Efficient Local Search Methods for Soft Constraint Satisfaction Problems, Principal investigator (with H.F. Leung and P. Codognet—University of Paris 6), RGC Earmarked Grant from the Research Grant Council (Hong Kong), 2002–2004, HK\$413,404
- 29. Adaptive Strategies for Soft Bid-Determination in Agent Based Continuous Double Auctions, Co-investigator (with H.F. Leung), RGC Earmarked Grant from the Research Grant Council (Hong Kong), 2002–2004, HK\$599,404
- 30. Virtual Interactive Student-Oriented Learning Environment (VISOLE)—Extending the Frontier of WEB-Based Learning, Co-investigator (with F.L. Lee—Dept of Curriculum and Instruction, Y. Leung—Dept of Geography and Resource Management, K.C. Chau—Dept of Geography and Resource Management), RGC Earmarked Grant from the Research Grant Council (Hong Kong), 2002–2004, HK\$793,605
- 31. Summative Evaluation of the Web-based PBL Package—Tong Pak Fu and Chou Heung: The Probabilistic Fantasy, Co-Principal investigator (with T.S. Lau and F.L. Lee), Teaching Development Grant 1998/2001, 1st Tranche, Promotion of Experience Sharing and Sharing of Good Teaching and Learning Practices, CLEAR, The Chinese University of Hong Kong, 2001–2002, HK\$250,000
- 32. Reducing Search Space in Local Search for Constraint Satisfaction, Principal investigator (with H.F. Leung and P.J. Stuckey—University of Melbourne), RGC Earmarked Grant from the Research Grant Council (Hong Kong), 2001–2003, HK\$387,248
- 33. Integration of Constraint Satisfaction Techniques and Mixed Integer Programming, Coinvestigator (with H.F. Leung), RGC Earmarked Grant from the Research Grant Council (Hong Kong), 2001–2003, HK\$387,248

- Collaborating Redundant Models in Constraint Satisfaction, Principal investigator (with H.F. Leung and P.J. Stuckey—University of Melbourne), RGC Earmarked Grant from the Research Grant Council (Hong Kong), 2000–2002, HK\$437,817
- 35. Solving Constrained Optimization Problems with Lagrangian-Based Search Methods, Coinvestigator (with V. Tam—National University of Singapore, Singapore, P.J. Stuckey— University of Melbourne, Australia and E. Tsang—University of Essex, U.K.), ARF Grant from the National University of Singapore (Singapore), 1999–2001, SG\$45,000
- 36. Using Stochastic Methods to Guide Search in Constraint Programming. Principal investigator (with H.F. Leung and P.J. Stuckey—University of Melbourne), RGC Earmarked Grant from the Research Grant Council (Hong Kong), 1998–2000, HK\$405,000
- 37. Soft Constraint-Based Scheduling in Intelligent Multiagent Systems. Co-Investigator (with H.F. Leung and Keith L. Clark—Imperial College), RGC Earmarked Grant from the Research Grant Council (Hong Kong), 1998–2000, HK\$455,000
- 38. Co-operative Constraint Satisfaction Among Intelligent Agents. Co-Principal investigator (with H.F. Leung and K.L. Clark—Imperial College), UK-HK Joint Research Scheme 96-97, British Council, HK\$77,700
- 39. Multiparadigm Programming Language Implementation and Applications. Principal investigator (with H.F. Leung), Direct Grant from the Research Grant Council (Hong Kong), 1996–1998, HK\$100,000
- 40. Object-oriented Real-time Rule-based Programming for Intelligent Control. Co-investigator (with H.F. Leung), Direct Grant from the Research Grant Council (Hong Kong), 1996–1998, HK\$100,000
- Binary Fuzzy Constraint Satisfaction Problems: Properties and Solutions. Co-investigator (with H.F. Leung), The Croucher Foundation Research Grant (CF94/21), 1996–1998, HK\$482,000
- 42. Stochastic Solvers in Constraint Programming. Principal investigator (with Peter Stuckey— U. of Melbourne), Young Asian Scholars 1996, University of Melbourne, AUD5,000
- 43. Real-time Logic Programming for Intelligent Control. Co-investigator (with H.F. Leung), Direct Grant from the Research Grant Council (Hong Kong), 1995–1997, HK\$150,000
- 44. Towards an AI Architecture for Very Large-Scale Constraint Satisfaction Problems. Principal investigator (with H.F. Leung and L.W. Chan), Direct Grant from the Research Grant Council (Hong Kong), 1995–1997, HK\$150,000

- 45. Integrating Constraint Logic Programming and Artificial Neural Network. Principal investigator, Direct Grant from the Research Grant Council (Hong Kong), 1995–1996, HK\$37,000
- 46. A Multi-Paradigm Programming Design Methodology. Co-Principal investigator (with P.K.C. Pun—University of Manchester), UK-HK Joint Research Scheme 94-95, British Council, £6,691
- 47. Design and Implementation of a Distributed Concurrent Constraint Logic Programming System and Its Applications. Principal investigator (with H.F. Leung, K.L. Clark— Imperial College, and M.H. van Emden—University of Victoria), RGC Earmarked Grant from the University and Polytechnic Grants Committee (Hong Kong), 1993–1995, HK\$266,000
- 48. Constraint Interval Arithmetic in CLP( $\mathcal{R}$ ). Principal investigator, Direct Grant from the University and Polytechnic Grants Committee (Hong Kong), 1992–1993, HK\$80,000

### Awards

- 1. Distinguished Senior Program Committee Member, 28th International Joint Conference on Artificial Intelligence, Macao, China, 2019
- 2. The 2017 University Education Award, The Chinese University of Hong Kong, 2016-17
- 3. The Vice-Chancellor's Exemplary Teaching Award, The Chinese University of Hong Kong, 2014-15
- 4. Dean's Exemplary Teaching Award, Faculty of Engineering, The Chinese University of Hong Kong, 2014-15
- 5. Department Exemplary Teaching Award, Department of Computer Science and Engineering, Faculty of Engineering, The Chinese University of Hong Kong, 2014-15
- 6. Department Service Award, Department of Computer Science and Engineering, Faculty of Engineering, The Chinese University of Hong Kong, 2013-14
- 7. Outstanding Teaching, MITE 6102 (Object-Oriented Programming), Masters of Arts Programme in Information Technology in Education, Faculty of Education, 2012-13
- 8. Department Service Award, Department of Computer Science and Engineering, Faculty of Engineering, The Chinese University of Hong Kong, 2011-12
- 9. Department Exemplary Teaching Award, Department of Computer Science and Engineering, Faculty of Engineering, The Chinese University of Hong Kong, 2011-12

- 10. Certificate of Merit on Teaching Performance, Department of Computer Science and Engineering, Faculty of Engineering, The Chinese University of Hong Kong, 2010-11
- Best Paper Award, 18th International Conference on Computers in Education (ICCE'10), Paper title: The Significance of Emotional Support to Students in Game-based Learning, Authors: Morris S.Y. Jong, Junjie Shang, Fong-lok Lee, and Jimmy H.M. Lee. Putrajaya, Malaysia, November, 2010
- 12. Department Service Award, Department of Computer Science and Engineering, Faculty of Engineering, The Chinese University of Hong Kong, 2009-10
- 13. Finalists of Best Paper Award, 3rd IEEE International Conference on Digital Game and Intelligent Toy Enhanced Learning, Paper title: "A Case Study of a Non-Gamer Student's Learning Process in VISOLE", Authors: Morris S.Y. Jong, Junjie Shang, Fong-lok Lee, and Jimmy H.M. Lee, Koahsiung, Taiwan, April, 2010.
- Best Paper Award, 13th Global Chinese on Computers in Education Conference (GC-CCE 2009), Paper title: "Problem Solving Process and Strategies in the Virtual Interactive Student-Oriented Learning Environment", Authors: J.J. Shang, M. Jong, F.L. Lee, and J.H.M. Lee, Taipei, Taiwan, May, 2009.
- Best Paper Award, 11th Global Chinese Conference on Computers in Education (GC-CCE'07), Paper title: "Motivation Strategies and Effectiveness of VISOLE", Authors: J.J. Shang, M. Jong, F.L. Lee, and J.H.M. Lee, Quangzhou, China, May, 2007.
- 16. The Vice-Chancellor's Exemplary Teaching Award, The Chinese University of Hong Kong, 2004-05
- Faculty Exemplary Teaching Award, Faculty of Engineering, The Chinese University of Hong Kong, 2004-05, 2002-03, 2000-01, 1999-00, 1998-99
- Department Exemplary Teaching Award, Department of Computer Science and Engineering, Faculty of Engineering, The Chinese University of Hong Kong, 2006-07, 2005-06, 2003-04, 2001-02
- 19. Faculty Service Award, Faculty of Engineering, The Chinese University of Hong Kong, 2003-04
- Best Presentation Award, Second International Conference on Principles and Practice of Constraint Programming, Cambridge, Massachusetts, USA, 1996

#### Keynote Speeches and Invited Talks

- 1. Keynote Speaker, *Fable-Based Learning in MOOCs: Experience Sharing*, 2019 Taiwan Association of Educational Communication and Technology (TAECT) Annual Meeting cum International Academic Conference—Technology Inspired Professional Learning, Hsinchu, Taiwan, November, 2019
- 2. Invited Speaker, *Fable-Based Learning in MOOCs: A Tale of Two Cities*, 2018 Online Learning Summit Taiwan, National Chiao Tung University, Hsinchu, Taiwan, May, 2018
- 3. Keynote Speaker, *Fable-Based Learning in MOOCs: A Tale of Two Cities*, International Conference on Game-Based Learning (ICGBL 2017), Nanjing, China, November, 2017
- 4. Invited Speaker, *CUHK* + *UniMelb* = *Fable-based Learning* + *A Tale of Two Cities*, 4th Greater China MOOC Symposium (GCMS 2017), Hong Kong, July, 2017
- 5. Keynote Speaker, *Global Cost Functions in Weighted Constraint Satisfaction*, Workshop on Hard Computational Problems: Representations, Algorithms and Applications, Chang Chun, China, July, 2017
- 6. Banquet Speaker, *Everything You Always Wanted to Know About PC Chairs, But Were Afraid to Ask.* The 19th International Conference on Principles and Practice of Constraint Programming (CP 2013), Uppsala, Sweden, September, 2013
- 7. Keynote Speaker, *The Joy of Inquiry-Based Learning*. Joyful Learning and Society Conference (JL&S 2011), Kenting, Taiwan, January, 2011
- 8. Keynote Speaker, *Education in Games? Or Games in Education?*. The 10th IEEE International Conference on Advanced Learning Technologies (ICALT2010), Sousse, Tunisia, July, 2010
- 9. Keynote Speaker, Impeding Factors of Game-based Constructivist Learning: a Case Study, International Conference on Innovation of Teaching and Learning (ICITL2009), Jhongli City, Taiwan, November, 2009
- Keynote Speaker, Solving the Salinity Control Problem in a Potable Water System Using Constraint Programming. 2009 International Symposium on Education and Computer Science, Wuhan, China, March, 2009
- 11. Plenary Invited Speaker, *Education in Games? Or Games in Education?*. The 16th International Conference on Computers in Education, Taipei, Taiwan, October, 2008
- 12. Keynote Speaker, *Pedagogy of Educational Games—What Makes an Educational Game Educational*. Second Guangdong Hong Kong Macau Conference on Information Technology in Education (GHM-06), Guangzhou, China, September, 2006

- Invited Speaker, CUPIDE—The Chinese University Plagiarism IDentification Engine. Tenth Global Chinese Conference on Computers in Education (GCCCE'2006), Beijing, China, June, 2006
- 14. Keynote Speaker, *Application of Scenario-based Learning in Digital Games*. Symposium on Game-based Digital Learning, Taipei, Taiwan, March, 2006

## Services

Although research and teaching are the main duties of an academic, I participate and contribute extensively in community work in the University, the local and the international arenas.

## University/College/Faculty/Department Administrative Duties

I participate actively in committee work at the university, college, faculty and department level. I list some of the important offices I held.

- University
  - 1. Chairman, Senate Committee on Student Discipline, 2012-present
  - 2. Chairman, Student IT Competence (SITC) Committee: 2005-2014
  - 3. Chairman, Run Run Shaw Science Building Management Committee: 2019-present
  - 4. Member, University Council: 2019-22
  - 5. Member, Academic Support Subgroup, University's Rapid Response Task Force: 2020
  - 6. Member, Task Force on Upholding Academic Honesty
  - 7. Member, Fitness to Practice Committee, Faculty of Medicine: 2012-present
- College
  - 1. Associate Dean of Students: 2014-present
  - 2. Chairman, New Asia College Committee on Scholarships and Bursaries: 2012present
  - 3. Member, Board of Trustees: 2019-22
  - 4. Member, Committee for the Appointment of the Next Head of New Asia College: 2020
  - 5. Chairman, College Staff Association: 2011-2012

#### • Faculty

- 1. Associate Dean (Education): 2019-2022
- 2. Assistant Dean (Education): 2018-2019
- 3. Graduate Division Head, Division of Financial Technology: 2019-present
- 4. Programme Director, Master of Science in Financial Technology: 2018-19
- 5. Program Co-Director, Master of Arts Programme in Information Technology in Education, Hong Kong Institute for Educational Research, Faculty of Education: 2011-2014
- 6. Course Director, University Core ENGG1000 IT Foundation Course: 2010-present
- 7. Chairman, 1-Unit IT Foundation Course Task Force: 2009-2012
- Department
  - 1. Chairman, Curriculum Committee: 2005-2006, 2011-2014
  - 2. Chairman, Teaching and Learning Committee: 2012-13
  - 3. Graduate Division Head, Division of Computer Science & Engineering: 2008-2011
  - 4. Chairman, Undergraduate Academic Advice Committee: 2007-2008
  - 5. Chairman, Discipline Committee: 2007-2008
  - 6. Chairman, Admissions: 2001-2004
  - 7. Chairman, Computer User Group: 1992-2005

#### Services to the International Community

Serving the international community is a duty of every academic. Towards this aim, I participate actively in the committees of various conferences and organizations. In the following, I summarize some of my important contributions.

- Associate Editor, Artificial Intelligence Review, Springer, 2015–present
- Associate Editor, Journal of Artificial Intelligence Research, AAAI Press, 2017–2020
- Member, Editorial Board, Journal of Artificial Intelligence Research, AAAI Press, 2011–2017
- Member, Editorial Board, The Research and Practice in Technology Enhanced Learning Journal, Springer, 2011-21
- Member, Editorial Board, The CONSTRAINTS Journal, Springer, 2009-14

- Member, Editorial Board, Journal of Discrete Algorithms, Elsevier, 2005–14
- Member, Editorial Board, Constraint Programming News, Association for Constraint Programming, 2004–13
- Member, Editorial Advisory Board, Journal of Educational Technology & Society, 2010–present
- Member, IJCAI-JAIR Best Paper Award Selection Committee, 2019-20
- Secretary, Executive Committee, Association of Constraint Programming, 2007–2012
- Elected Member, Executive Committee, Association of Constraint Programming, 2006-09
- Member, Executive Committee, Global Chinese Society of Computers in Education (GCSCE), 2006–present
- Co-Chair, Special Interest Group in Digital Game and Intelligent Toy Enhanced Learning (SIGDigitel), Asia-Pacific Society for Computers in Education, 2008–2009
- Vice Chair, Global Chinese Society for Computers in Education (Hong Kong and Macau Regional Chapter), 2004–present
- Steering Committee Member of the IDEAL conference series, 2002-
- Conference Chair of Education Conferences: Edutainment'11
- Program Committee Chair of Computer Science Conferences: CP'11
- Program Committee Chair of Education Conferences: GCCCE'07, ICCE'09 (DIGITEL Track), AECT-ICFER'13, ICALT'14 (DIGITEL Track), ICALT'15 (DIGITEL Track), GCCCE'19 (Sub-Conference on Science of Learning, Computer-Assisted Collaborative Learning and Smart Education)
- Program Committee Chair of Computer Science Workshops: CP'{09,07} Modeling workshop
- Program Committee Chair of Education Workshops: GAME'06, GAME'07
- Area Chair of conference: IJCAI-PRICAI'20
- Organizing Committee Chair of conferences: GCCCE'04, IDEAL'2000
- Doctoral Consortium Chair of conferences: IJCAI'{13,17}
- Panel Chair of conferences: GCCCE'10

- Workshop Chair of conference: CP'{08,99}, ICCE'07
- Tutorial Chair of conference: CP'{08,99}
- Workshop Co-Chair of conference: ICCE'06
- Poster Co-Chair of conference: ICCE'12
- Senior Program Committee member of AI conference: AI'{17,16,13,07}, CP'{17,15,14,13}, IJCAI'{19,18,17,15,13,11}, AAAI'12
- Senior Program Committee member of IT in Education conference: ICCE'08
- Program Committee member of AI conferences:
  - IJCAI'{16,09}
  - AAAI'{20,18,17,16,15,13,10,08,07,06,04}
  - CP'{20,19,18,16,10,09,08,07,06,05,04,99,98}
  - ICTAI'{20,19,18,17,16,05}
  - AAMAS'{16,15}
  - CPAIOR'13
  - ECAI'{16,12}
  - ICA'16
  - LION'16
  - FLAIRS'{05,04}
  - ACM-SAC (Constraint Track)'{15,14,13,12,11,10,09,08,07,06,05}
  - $AI'\{09,08\}$
  - IDEAL'{06,05,04,03,02,00}
- Program Committee member of Agent and other computer science conferences: ASIAN'{04,97}, IAT'{15,06,05,04,03,01}, DIMEA'07, ESAS'07, ICDCIT'07, ICEGOV'07
- Program Committee member of computer science workshops: numerous Post-CP workshops on modeling and soft constraints, PRIMA'{06,05,04,03,02,01}
- Program Committee member of IT in Education conferences and workshops: TALE '12, ICTE'10, ICWL'08, ICCE'{14,12,11,10,09,07}, GCCCE'{13,12,11,10,08,07,05,04}, GHM-CITE'05, DIGITEL'{12,10,07}, Edutainment'{12,11,07}, T4E'{11,10}, UXFUL'10, JEL'11, DUPL & SPeL@ICALT 2012
- Regular reviewer for AI, constraints, agents, and education conferences and journals

### Services to Hong Kong

As an educator in higher learning and a professional, I never hesitated in serving my expertise to the local community. In the following, I highlight some of the important appointments.

- Panel Chair, Learning Programme Re-accreditation at QF Level 4 (Face-to-face and Online Programmes), Professional Certificate in Cosmetic Light Therapy, Council of Health and Beauty Limited, Hong Kong Council for Academic Accreditation and Vocational Qualifications, August, 2020
- Panel Chair, Learning Programme Accreditation for Bachelor of Christian Ministry (Honours) Programme, Gratia Christian College, Hong Kong Council for Academic Accreditation and Vocational Qualifications, August, 2020
- Panel Chair, Assessment of Substantial Change, Professional Certificate in Cosmetic Light Therapy, Council of Health and Beauty Limited, Hong Kong Council for Academic Accreditation and Vocational Qualifications, February, 2020
- Panel Chair, Initial Evaluation (IE) and Learning Programme Accreditation (LPA) for the Commercial Crime Bureau, Hong Kong Police Force (CCB), Hong Kong Council for Academic Accreditation and Vocational Qualifications, June, 2019
- Member, Assessment Panel, ELITE Programme, Hong Kong Science and Technology Parks Corp, 2019-22
- Member, Expert Review Panel, Logistics and Supply Chain MultiTech R&D Centre (LSCM), 2019-2020
- Member, Project Steering Committee, Logistics and Supply Chain MultiTech R&D Centre (LSCM), 2019-2020
- Panel Chair, Learning Programme Re-Accreditation for (a) Professional Diploma in Business Management (b) Professional Diploma in Insurance (c) Professional Diploma in Java 3-Tier Web Application Development and Oracle Database Administration Java (d) Professional Diploma in Management for the Catering Industry for Institute of Professional Education and Knowledge (PEAK), Vocational Training Council, Hong Kong Council for Academic Accreditation and Vocational Qualifications, November, 2017
- Visiting Team Chairman, Accreditation Exercise for the Hong Kong Baptist University, Computer Science, and Computing and Information Systems Programmes, The Hong Kong Institution of Engineers (HKIE), Hong Kong, November, 2017
- Visiting Team member, Accreditation Exercise for the University of Hong Kong, Computer Science Programme, The Hong Kong Institution of Engineers (HKIE), Hong Kong, October, 2016

- Consultant, Enriched IT Class Programme, Pak Kau College, 2015-23
- Visiting Team member, Accreditation Exercise for the City University of Hong Kong, Computer Science Programme, The Hong Kong Institution of Engineers (HKIE), Hong Kong, 2015
- Member, Steering Committee, Hong Kong Information and Communication Technology Awards, Office of Government Chief Information Officer, Hong Kong Government, 2013–
- Member, Validation Panel, Programme Validation for BSc (Hons) Computing and BSc (Hons) Multimedia Computing, Hong Kong Council for Academic Accreditation and Vocational Qualifications, February, 2014
- Member, IT Division, Hong Kong Institution of Engineers, Hong Kong, (Co-opted) 2012-13, 2013-14
- Member, Steering Committee on Selection, Quality Assurance and Review for the e-Textbook Market Development Scheme, Education Bureau, Hong Kong SAR Government, Hong Kong, 2012-16
- Member, High-level Advisory Panel, Chief Executive's Award for Teaching Excellence (CEATE), Education Bureau, Hong Kong SAR Government, Hong Kong, 2011-12
- Visiting Team member, Accreditation Exercise for the Hong Kong Polytechnic University Geomatics Programmes, The Hong Kong Institution of Engineers (HKIE), Hong Kong, 2010
- Member, Steering Committee, Hong Kong ICT Awards, Hong Kong, 2014-15
- Convenor, Standards Assurance Sub-Committee, Hong Kong ICT Awards, Hong Kong, 2010-16
- Assessor, Accreditation Exercise for the Hong Kong University of Science and Technology Computer Science Programmes, The Hong Kong Institution of Engineers (HKIE), Hong Kong, 2010
- Member, Steering Committee, Development of a Certification Roadmap for IT Professional Certification Project, Hong Kong Computer Society, 2009-10
- Appointed member, CE Computer & Information Technology Subject Committee, Hong Kong Examinations and Assessment Authority, 2009-11
- Member, Steering Committee on Strategic Development of Information Technology in Education (ITEd), Hong Kong Government, 2009–15

- Assessor, Accreditation Exercise for the City University of Hong Kong Computer Science Programme, The Hong Kong Institution of Engineers (HKIE), Hong Kong, 2007
- Appointed Member, Accreditation Committee for Computer Science Programmes, The Hong Kong Institution of Engineers (HKIE), Hong Kong, 2006–10
- Panel Chairman, Validation Panel, Validation of Certificate in Vocational Studies (Business) and Foundation Diploma (Computing)—Vocational Training Council, Hong Kong Council for Academic Accreditation, Hong Kong, 2004
- Member of Liaison Panel for Academic Accreditation, and Panel chairman and member of validation panels, Hong Kong Council for Academic Accreditation (HKCAA), to validate various post-secondary programmes related to IT [HKCAA, subsequently renamed to HKCAAVQ, is an independent *statutory* body and accreditation authority established in 1990 by the Hong Kong Government in charge of the academic standards of post secondary programmes in higher education institutions in Hong Kong and on educational standards and qualifications in general]
- Chief examiner and moderator of Papers I & II, Hong Kong Advanced Level (A-Level) Examination, Computer Studies: 1994–2001, 2002–2003
- Council member and Director of Professional Development, Hong Kong Computer Society: 1996–2000
- Local Arrangement Chair, National Olympiad in Informatics (NOI'97), 1997 [NOI is the national competition for the entire China to select representatives to participate in the International Olympiad in Informatics (IOI)]
- Executive Committee member, ACM (HK Chapter): 1992–1995 (Vice Chairman in 1994–1995)