Curriculum Vitae of Tsz-Chiu Au

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EDUCATION

Doctor of Philosophy, Computer Science, August 2008
University of Maryland, College Park, Maryland, U.S.A.
Dissertation: *Synthesis of Strategies for Non-Zero-Sum Repeated Games*
Thesis committee: Dana Nau (chair), Sarit Kraus, P.S. Krishnaprasad,
                Atif Memon, James Reggia, V.S. Subrahmanian
Adviser: Prof. Dana Nau

Master of Science, Computer Science, May 2002
University of Maryland, College Park, Maryland, U.S.A.
Scholarly Paper: *Conditions of Efficient Plan Reuse: An Analysis*
Adviser: Prof. Dana Nau

Bachelor of Engineering (*First Class Honors*), Computer Science, June 1997
Hong Kong University of Science and Technology, Hong Kong, China.
Final Year Project: *A Distributed Software Development Platform for*
                 Internet Programs
Adviser: Prof. Shing-Chi Cheung

APPOINTMENTS

March 2019 - present
Associate Professor, Ulsan National Institute of Science and Technology, South Korea.
Founded the Agents and Robotic Transportation Lab which focuses on artificial intelligence, robotics, and transportation research.

August 2012 - February 2019
Assistant Professor, Ulsan National Institute of Science and Technology, South Korea.
Founded the Agents and Robotic Transportation Lab which focuses on artificial intelligence, robotics, and transportation research.

October 2008 - July 2012
Postdoctoral Fellow, The University of Texas at Austin, TX, U.S.A.
Worked on research projects on autonomous vehicle and traffic management under the supervision of Prof. Peter Stone. Developed a software package called AIM4, a traffic simulator for autonomous traffic control. Developed a web application for prediction market research.

September 2001 - August 2008
Research Assistant, University of Maryland, College Park, MD, U.S.A.
Worked on research projects on case-based planning, planning in multi-agent environments, planning under uncertainty, and the Iterated Prisoner's Dilemma, under the guidance of Prof. Dana Nau. Participated in the development of SHOP2, a domain-independent automated-planning system based on Hierarchical Task Network (HTN) planning. SHOP2 won one of the top four prizes at the 2002 International Planning Competition.

June 1997 - August 1997
>
> **Student Programmer**, Research Center, Hong Kong Government, Hong Kong
> Developed software modules for the Wind Monitoring System (WMS) for Tsing Ma Bridge in Hong Kong. Performed unit testing on the WMS.

TEACHING EXPERIENCE

August 2012 - present
>
> **Assistant/Associate Professor**, Ulsan National Institute of Science and Technology.
> Taught the following undergraduate and graduate courses:
>
> - Artificial Intelligence. Spring 2013, Spring 2014, Spring 2015, Fall 2016, Spring 2017, Spring 2018, Spring 2020, Fall 2021, Fall 2022.
> - Artificial Intelligence Programming II. Fall 2020, Fall 2021.
> - Autonomous Robots. Fall 2013, Fall 2014, Fall 2015, Spring 2016, Fall 2017, Spring 2020, Spring 2021, Fall 2022, Fall 2023.
> - Deep Learning, Fall 2018.
> - Machine Learning, Fall 2020.
> - Data Structures. Fall 2016, Fall 2017, Spring 2018.
> - Special Topics on Web Technology, Fall 2023.
> - Bio & Disaster Data Analysis through High-Performance Machine Learning, Spring 2018.
> - Engineering Programming 1. Spring 2014, Spring 2015.
> - Introduction to C++ Programming. Fall 2012, Spring 2013.
> - Software System Design. Fall 2012.

September 2000 - May 2001
>
> **Teaching Assistant**, Department of Computer Science, University of Maryland, College Park.
> Assisted teaching in two courses: Introduction to C programming (Fall 2000) and Organization of Programming Languages (Spring 2001).

January 2000 - May 2000
>
> **Instructional Assistant**, Department of Information and Systems Management, Hong Kong University of Science and Technology.
> Assisted teaching in courses on internet application development and Java programming.

September 1997 - June 1999
>
> **Teaching Assistant**, Department of Computer Science, Hong Kong University of Science and Technology.
> Assisted teaching in courses on design and analysis of algorithms, computer organization, and computer architecture.

ADVISING

- Minhyuk Park, Ulsan National Institute of Science and Technology, 2022. M.Sc./Ph.D.

- Jaebak Hwang, Ulsan National Institute of Science and Technology, 2022. Ph.D.

- Thuy Nguyen Bui, Ulsan National Institute of Science and Technology, 2019. M.Sc.

- Dohee Lee, Ulsan National Institute of Science and Technology, 2022. M.Sc./Ph.D.
  Doctoral thesis: Improving Robot Team's Performance by Passing Objects between Robots

- Jaebak Hwang, Ulsan National Institute of Science and Technology, 2021. M.Sc.
  Master's thesis: Calibrating Traffic Models and Optimizing Agents in Robocup Rescue Simulation using Reinforcement Learning.

- Sangwoo Ha, Ulsan National Institute of Science and Technology, 2019.
  Master's thesis: Predicting the Location of Injured People in Disaster Zones using Deep Learning.

- Dung Nguyen, Ulsan National Institute of Science and Technology, 2018.
  Master's thesis: Fail-Safe Planning in Autonomous Systems.

- Ty V. Nguyen, Ulsan National Institute of Science and Technology, 2016.
  Master's thesis: Vehicle Dynamics Modeling and Motion Planning with Predictable Timing and Velocity.

- Shun Zhang, The University of Texas at Austin, 2012.
  Master's thesis: Semi-Autonomous Intersection Management.

- Neda Shahidi, The University of Texas at Austin, 2009-2010.
  Master's thesis: A Response Delayed Policy for Autonomous Intersection Management.

PROFESSIONAL ACTIVITIES

- **Editorial board:**
  - Associate Editor, *IEEE Robotics and Automation Letters (RA-L)*, 2022–now.
  - Associate Editor, *IEEE International Conference on Robotics and Automation (ICRA)*, 2022, 2023.

- **Program committee board:**
  - *International Joint Conference on Artificial Intelligence (IJCAI)*, 2021–now.

- **Journal article reviewer:**
  - *Artificial Intelligence*, 2012, 2014, 2017.
  - *IEEE Transactions on Robotics*, 2011.
  - *IEEE Transactions on Systems, Man, and Cybernetics*, 2011.
  - *IEEE Robotics and Automation Letters*, 2018, 2019, 2020, 2021, 2022.
  - *Journal of Artificial Intelligence Research (JAIR)*, 2011, 2014.
  - *Robotics and Autonomous Systems*, 2012.
  - *Theory and Decision*, 2008, 2009, 2010, 2012, 2013, 2014.
  - *The Knowledge Engineering Review*, 2012.
  - *Central European Journal of Operations Research*, 2012.
  - *ACM Transactions on Intelligent Systems and Technology (TIST)*, 2012.
  - *ACM Transactions on Autonomous and Adaptive Systems (TAAS)*, 2012, 2014.
  - *International Journal of Artificial Intelligence & Applications (IJAIA)*, 2012, 2013.
  - *Journal of Transportation Engineering*, 2013.
  - *Journal of Advanced Transportation*, 2014, 2015.
  - *IEEE Transactions on Intelligent Transportation Systems and Intelligent Transportation Systems Magazine*, 2014, 2015, 2016, 2017.

- – *Intelligent Service Robotics*, 2019, 2020, 2021.
- – *Simulation Modelling: Practice and Theory*, 2016.
- – *Networks*, 2020.

- **Conference senior program committee member:**

  - – *International Joint Conference on Artificial Intelligence (IJCAI)*, July 2018, August 2019, July 2020, August 2021
  - – *International Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, May 2019.

- **Conference program committee member:**

  - – *The AAAI Conference on Artificial Intelligence (AAAI)*, July 2014, February 2016, February 2017, February 2020, Februrary 2022, February 2023.
  - – *The AAAI Conference on Artificial Intelligence (AAAI)*, Computational Sustainability and AI Track, August 2011, July 2012, July 2013, July 2014.
  - – *Autonomous Agents and Multiagent Systems (AAMAS)*, May 2016.
  - – *International Joint Conference on Artificial Intelligence (IJCAI)*, July 2015, July 2018, August 2019, July 2020, August 2021, August 2022, August 2023.
  - – *European Conference on Artificial Intelligence (ECAI)*, August 2010, August 2012, July 2018.
  - – *Artificial Intelligence and Application (AIA)*, September 2012.
  - – *International Conference on Autonomic and Autonomous Systems (ICAS)*, March 2013, April 2014, May 2015, June 2016.
  - – *International Conference on Agents and Artificial Intelligence (ICAART)*, 2012, 2013, 2014, 2015, 2016.

- **Conference paper reviewer:**

  - – *The AAAI Conference on Artificial Intelligence (AAAI)*, 2011, 2012, 2013, 2014, 2016, 2017, 2020, 2022, 2023.
  - – *International Joint Conference on Artificial Intelligence (IJCAI)*, 2015, 2018, 2019, 2020, 2021, 2022, 2023.
  - – *IEEE International Conference on Robotics and Automation (ICRA)*, May 2011, May 2013, May 2014, May 2015, May 2017, May 2018, May 2019, May 2020, May 2021, May 2022, May 2023.
  - – *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, September 2011, October 2012, November 2013, September 2014, September 2015, October 2016, September 2017, October 2018, November 2019, October 2020, September 2021.
  - – *Robotics: Science and Systems (RSS)*, July 2021, June 2022.
  - – *European Conference on Artificial Intelligence (ECAI)*, August 2010, August 2012.
  - – *The International Conference on Ubiquitous Computing (Ubicomp)*, September 2012.
  - – *International Conference on Agents and Artificial Intelligence (ICAART)*, 2012, 2013, 2014, 2015, 2016.
  - – *The IEEE International Conference on Automation Science and Engineering (CASE)*, August 2013, August 2016.
  - – *The Annual Meeting of Transportation Research Board (TRB)*, January 2014.
  - – *IEEE Conference on Intelligent Transportation Systems (ITSC)*, October 2014, September 2015, November 2016, October 2019, September 2020.

- *IEEE/SICE International Symposium on System Integration (SII)*, December 2015.
- *ACM SIGCAS Conference on Computing and Sustainable Societies (COMPASS)*, June 2018.
- *IEEE Intelligent Vehicles Symposium (IV)*, June 2018.

- **Workshop program committee member:**

  - *ICRA workshop on "Machine Learning in Planning and Control of Robot Motion" (MLPC)*, 2012, 2018, 2020.
  - *ICAPS workshop on "Combining Task and Motion Planning for Real-World Applications" (TAMPRA)*, 2012.

- **Workshop paper reviewer:**

  - *Machine Learning in Planning and Control of Robot Motion Workshop (MLPC)*, September 2014.

- **Book chapter reviewer:**

  - *Game Theoretic Analysis of Congestion, Safety and Security.* Springer. 2014.

- **Proposal reviewer:**

  - *RSS workshop proposal reviewer*, 2016.
  - *The Netherlands Organisation for Scientific Research (NWO)*, 2011.

- **Technical committee:**

  - *Co-chair of the IEEE Robotics and Automation Society Technical Committee on Algorithms for Planning and Control of Robot Motion*, 2019–now.
  - *Committee member for IEEE ICRA Best Unmanned Aerial Vehicle Paper Award*, 2021.

- **Guest Editor:**

  - *Special Issue on Multi-Robot Systems, IEEE Intelligent Systems Magazine*, 2017.

- **Workshop Organizer:**

  - *ICRA workshop on "Machine Learning in Planning and Control of Robot Motion" (MLPC)*, 2018.

- **Departmental and university service:**

  - Coordinator of the departmental seminar series, Ulsan National Institute of Science and Technology, 2020.
  - Coordinator of the task force to support programming competitions, Ulsan National Institute of Science and Technology, 2017.
  - Guest Coach of Kazakhstan's national Olympiad team for International Olympiad in Informatics (IOI), Ulsan National Institute of Science and Technology, 2013.
  - Coordinator of the Dean's Fellow Lecture Series, Department of Computer Science, University of Maryland, College Park, 2008.

JOURNAL ARTICLES

1. H. Moon*, J. Martinez-Carranza, T. Cieslewski, M. Faessler, D. Falanga, A. Simovic, D. Scaramuzza, S. Li, M. Ozo, C. D. Wagter, G. d. Croon, S. Hwang, S. Jung, H. Shim, H. Kim, M. Park, **T.-C. Au**, G. Lee, and S. J. Kim. Autonomous Drone Racing: Challenges and Implemented Technologies. *Intelligent Service Robotics (JIST)*, 2019.

2. D. Fajardo, **T.-C. Au****, S. T. Waller, P. Stone, and D. Yang. Automated Intersection Control: Performance of a Future Innovation Versus Current Traffic Signal Control. In *Transportation Research Record : Journal of the Transportation Research Board*, 2259, pp. 223-232, 2012.

3. D. Nau*, **T.-C. Au**, O. Ilghami, U. Kuter, H. Muñoz-Avila, J. W. Murdock, D. Wu, and F. Yaman. Applications of SHOP and SHOP2. *IEEE Intelligent Systems*, 20:2, pp.34–41, 2005.

4. D. Nau*, **T.-C. Au**, O. Ilghami, U. Kuter, J. W. Murdock, D. Wu, and F. Yaman. SHOP2: An HTN planning system. *Journal of Artificial Intelligence Research* 20:379-404, December 2003.

BOOK CHAPTER

5. **T.-C. Au***, S. Zhang, and P. Stone. Autonomous Intersection Management for Semi-Autonomous Vehicles. *Handbook of Transportation*, Routledge, Taylor & Francis Group, 2015.

6. **T.-C. Au*** and D. Nau. Is it Accidental or Intentional? A Symbolic Approach to the Noisy Iterated Prisoner's Dilemma. *The Iterated Prisoners' Dilemma: 20 Years on*, pp.231–262, World Scientific, 2007.

REFEREED CONFERENCE PUBLICATIONS

7. **T.-C. Au***. A Dynamic Programming Algorithm for Grid-based Formation Planning of Multiple Vehicles. *Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2023.

8. D. Lee, Q. Lu, and **T.-C. Au****. Dynamic Robot Chain Networks for Swarm Foraging. *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, 2022.

9. **T.-C. Au***. Extended Goal Recognition Design with First-Order Computation Tree Logic. *Proceedings of the 36th AAAI Conference on Artificial Intelligence (AAAI)*, 2022.

10. J. Hwang, S. Ko, and **T.-C. Au****. Calibrating Dynamic Traffic Assignment Models by Parallel Search using Active-CMA-ES. *Proceedings of IEEE International Conference on Intelligent Transportation (ITSC)*, 2021.

11. **T.-C. Au***. Gridlock-free Autonomous Parking Lots for Autonomous Vehicles. *Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2021.

12. D. Lee, Q. Lu, and **T.-C. Au****. Multiple-Place Swarm Foraging with Dynamic Robot Chains. *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, 2021.

13. D. Lee and **T.-C. Au****. Scheduling of Mobile Workstations for Overlapping Production Time and Delivery Time. *Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2019.

14. T. Nguyen and **T.-C. Au****. A Constant-Time Algorithm for Reachability of Arrival Times and Velocities. *Proceedings of the IEEE Intelligent Vehicles Symposium (IV)*, 2019.

15. J. Im, C. Yoo, D. Cho, K. Kim, J. Lee, D.-H. Cha and **T.-C. Au****. Deep learning-based monitoring and forecast of the intensity of tropical cyclones. *Proceedings of the IEEE Geoscience and Remote Sensing Society (IGARSS)*, 2019.

16. T. Nguyen, D. Nguyen, and **T.-C. Au****. Learning of Vehicular Performance Models for Longitudinal Motion Planning to Satisfy Arrival Requirements. *Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2017.

17. T. Nguyen and **T.-C. Au****. Extending the Range of Delivery Drones by Exploratory Learning of Energy Models. *Proceedings of the International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, May 2017.

18. D. Lee and **T.-C. Au****. Automatic Configuration of Mobile Conveyor Lines. *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, May 2016.

19. D. Lee and **T.-C. Au****. Virtual Safety Cages for Human-Robot Collaboration in Factories. *HCI Korea*. 2016.

20. D. Lee and **T.-C. Au****. Wearable Devices for Human-Robot Collaboration in Workplaces. *The 11th Korean Robotics Society Annual Conference*. 2016.

21. **T.-C. Au***, S. Zhang, and P. Stone. Semi-Autonomous Intersection Management. *Proceedings of the Thirteenth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, May 2014. Short paper.

22. **T.-C. Au***, C.-L. Fok, S. Vishwanath, C. Julien, and P. Stone. Evasion Planning for Autonomous Vehicles at Intersections. *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pp. 1541-1546, October 2012.

23. C.-L. Fok*, M. Hanna, S. Gee, **T.-C. Au**, P. Stone, C. Julien, and S. Vishwanath. A Platform for Evaluating Autonomous Intersection Management Policies. *Proceedings of ACM/IEEE Third International Conference on Cyber-Physical Systems (ICCPS)*, 2012.

24. **T.-C. Au***, M. Quinlan, and P. Stone. Setpoint Scheduling for Autonomous Vehicle Controllers. *Proceedings of IEEE International Conference on Robotics and Automation (ICRA)*, 2012.

25. M. Hausknecht, **T.-C. Au***, P. Stone, D. Fjardo, and S. T. Waller. Dynamic Lane Reversal in Autonomous Traffic Management. *Proceedings of IEEE Intelligent Transportation Systems Conference (ITSC)*, 2011.

26. M. Hausknecht, **T.-C. Au***, and P. Stone. Autonomous Intersection Management: Multi-Intersection Optimization. *Proceedings of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2011.

27. **T.-C. Au***, N. Shahidi, and P. Stone. Enforcing Liveness in Autonomous Traffic Management. *Proceedings of the Twenty-Fifth Conference on Artificial Intelligence (AAAI)*, pp. 1317-1322, 2011.

28. N. Shahidi, **T.-C. Au***, and P. Stone. Batch Reservations in Autonomous Intersection Management. *Proceedings of the Tenth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, May 2011.

29. D. Fajardo, **T.-C. Au****, S. T. Waller, P. Stone, and D. Yang. Automated Intersection Control: Performance of a Future Innovation Versus Current Traffic Signal Control. In *Transportation Research Board (TRB) 90th Annual Meeting*, 2011.

30. M. Quinlan, **T.-C. Au***, J. Zhu, N. Stiurca, and P. Stone. Bringing Simulation to Life: A Mixed Reality Autonomous Intersection. *Proceedings of IROS 2010-IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, October 2010.

31. **T.-C. Au***, S. Kraus, and D. Nau. Synthesis of Strategies from Interaction Traces. *Proceedings of the Seventh International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, May 2008.

32. **T.-C. Au***. Dynamic Programming with Stochastic Opponent Models in Social Games. *First International Conference on Computational Cultural Dynamics (ICCCD)*, pp 9-15. August 2007.

33. **T.-C. Au***, S. Kraus, and D. Nau. Symbolic noise detection in the noisy iterated chicken game and the noisy iterated battle of the sexes. *First International Conference on Computational Cultural Dynamics (ICCCD)*, pp. 16-25, August 2007.

34. **T.-C. Au*** and D. Nau. Reactive Query Policies: A Formalism for Planning with Volatile External Information. *IEEE Symposium on Computational Intelligence and Data Mining (CIDM)*, pp. 243-250, 2007.

35. **T.-C. Au*** and D. Nau. The Incompleteness of Planning with Volatile External Information. *Proceedings of the European Conference on Artificial Intelligence (ECAI)*, August 2006.

36. **T.-C. Au*** and D. Nau. Maintaining Cooperation in Noisy Environments. *Proceedings of the Twenty-First National Conference on Artificial Intelligence (AAAI-06)*, NECTAR paper, pp. 1561-1564, July 2006.

37. **T.-C. Au*** and D. Nau. Accident or Intention: That is the Question (in the Noisy Iterated Prisoner's Dilemma). *Proceedings of the Fifth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS'06)*, pp. 561-568, May 2006.

38. **T.-C. Au***, U. Kuter and D. Nau. Web Service Composition with Volatile Information. *Proceedings of the 4th International Semantic Web Conference (ISWC)*, pp. 52-66, 2005.

39. **T.-C. Au***, D. Nau, and V. Subrahmanian. Utilizing volatile external information during planning. *Proceedings of the European Conference on Artificial Intelligence (ECAI)*, pp. 647-651, August 2004.

40. **T.-C. Au***, H. Muñoz-Avila, and D. S. Nau. On the complexity of plan adaptation by derivational analogy in a universal classical planning framework. *Proceedings of the European Conference on Case-Based Reasoning (ECCBR)*, pp. 13-27, September 4-7 2002. **Winner of Best Research Paper Award**.

REFEREED WORKSHOP PAPERS

41. M. Park and **T.-C. Au****. Challenges in Using Drone Swarms as Video Game Platforms. In Proceedings of Human Multi-Robot Interaction Workshop (HMRI) at IROS, 2023.

42. D. Nguyen and **T.-C. Au****. Learning to Generate Backup Paths in Cooperative Transportation of Human-Robot Teams. *ICRA Workshop on Robot Teammates Operating in Dynamic, Unstructured Environments (RT-DUNE)*, 2018.

43. T. Nguyen, D. Nguyen, and **T.-C. Au****. Vehicular Performance Modeling for Longitudinal Motion Planning to Satisfy Arrival Requirements. *ICRA Workshop on Machine Learning in Planning and Control of Robot Motion (MLPC)*, 2018.

44. **T.-C. Au*** and D. Lee. Graph-based Scheduling Algorithms for Mobile Workstations. *IJCAI Workshop on Autonomous Mobile Service Robots*, 2016.

45. T. Nguyen and **T.-C. Au****. Instance-based Learning of Vehicular Performance Models. *IROS Workshop on Machine Learning in Planning and Control of Robot Motion (MLPC)*, 2015.

46. **T.-C. Au**[*] and T. Nguyen. Augmented Motion Plans for Planning in Uncertain Terrains. *IJCAI International Workshop on Planning and Scheduling for Space (IWPSS)*, 2015.

47. T. Nguyen and **T.-C. Au**[**]. Dynamic Programming Approach for Motion Planning with Arrival Requirements. *ICRA Workshop on Optimal Robot Motion Planning (WORMP)*, 2015.

48. T. Nguyen and **T.-C. Au**[**]. Motion Planning for Arrival Time and Velocity Requirements on Non-Homogeneous Terrains. *ICAPS Workshop on Planning and Robotics (PlanRob)*, 2015.

49. **T.-C. Au**[*], S. Zhang, and P. Stone. Intersection Management with Constraint-based Reservation Systems. *AAMAS 2014 Workshop on Autonomous Robots and Multirobot Systems (ARMS)*, 2014.

50. **T.-C. Au**[*] and P. Stone. Motion Planning Algorithms for Autonomous Intersection Management. *AAAI 2010 Workshop on Bridging The Gap Between Task And Motion Planning (BTAMP)*, 2010.

51. **T.-C. Au**[*], M. Quinlan, N. Stiurca, J. Zhu, and P. Stone. Planning for Improving Throughput in Autonomous Intersection Management. *ICAPS'10 Workshop on Combining Action and Motion Planning*, 2010.

52. **T.-C. Au**[*], U. Kuter, and D. S. Nau. Planning for interactions among autonomous agents. *International Workshop on Programming Multi-Agent Systems (ProMAS)*, 2009.

MISCELLANEOUS PUBLICATIONS

53. **T.-C. Au**[*], B. Banerjee, P. Dasgupta, and P. Stone. Multirobot Systems. *IEEE Intelligent Systems*, pp. 3-5. 2018.

54. **T.-C. Au**[*]. Extending the Range of Drone-based Delivery Services by Exploration. *arXiv*. 2020.

55. **T.-C. Au**[*], N. Shahidi, and P. Stone. Improving Transportation Efficiency for Sustainable Society by Autonomous Traffic Management. *Sustainability at UT Austin 2011 Symposium*, The University of Texas at Austin. 2011.

56. **T.-C. Au**[*]. Guidelines of Online Help Design, E-mail Help Methods and Online Customer Service for Website Developers. *Principles and strategies for practitioners designing universally usable sites*, 2000. http://www.otal.umd.edu/uupractice/help.

57. **T.-C. Au**[*]. An Analysis of Derived Belief Strategy's Performance in the 2005 Iterated Prisoner's Dilemma Competition. *Technical Report No. CS-TR-4756 / UMIACS-TR-2005-59*. University of Maryland, College Park. 2006.

INVITED TALKS

- "Smart Lifestyle in Smart Cities: How will AI change our daily life in the future?"
  2022 World Science Culture Forum, South Korea, October 2022.

- "AI Technologies for Autonomous Drone Racing: Challenges and Applications"
  Workshop of the Korean Society for Aeronautical & Space Sciences (UAS Division), South Korea, August 2019.

- "The Shapes of Reachable Sets in Longitudinal Motion Planning"
  Computer Science Department, University of New Mexico, USA, June 2019.

- "Autonomous Traffic Management: Transportation Systems of the Future unleashed by Automated Driving and Connected Cars"
  Special Session on Automated Driving and Connected Cars, International Conference on ICT Convergence, South Korea, October 2016.

- "Autonomous Traffic Management: Transportation Systems of the Future"
  Seoul National University, South Korea, March 2016.

- "Autonomous Intersection Management"
  University of Athens, Greece, October 2015.

- "Autonomous Traffic Management: Transportation Systems of the Future"
  Bar-Ilan University, Israel, June 2015.

- "Utilizing Autonomous Vehicles to Improve Transportation Efficiency"
  University of Ulsan, South Korea, May 2015.

- "Autonomous Traffic Management: Transportation Systems of the Future"
  Daegu Gyeongbuk Institute of Science and Technology (DGIST), South Korea, March 2015.

- "Autonomous Traffic Management: Transportation Systems of the Future"
  The Commonwealth Scientific and Industrial Research Organisation (CSIRO), Sydney, Australia, May 2013.

- "Noise Detection in Repeated Games"
  University of Ulsan, Department of Electrical Engineering Seminar, April 2013.

- "Control and Liveness in Autonomous Traffic Management"
  Hong Kong Baptist University, Department of Computer Science Seminar, February 2013.

- "Control and Liveness in Autonomous Traffic Management"
  University of Maryland, College Park, Department of Computer Science Seminar, October 2011.

- "Planning for Improving Throughput in Autonomous Intersection Management"
  The Chinese University of Hong Kong CSE Seminar, November 2010.

- "Planning for Improving Throughput in Autonomous Intersection Management"
  Hong Kong University of Science and Technology CSE Seminar, November 2010.

- Planning for Improving Throughput in Autonomous Intersection Management"
  The Hong Kong Polytechnic University, Department of Computing Seminar, November 2010.

- Improving Throughput by Planning in Autonomous Intersection Management"
  National Taiwan University CSIE Seminar, October 2010.

- Improving Throughput by Planning in Autonomous Intersection Management"
  Academia Sinica Institute of Information Science Seminar, Taiwan, October 2010.

- Noise Detection and Learning from Interaction Traces in Repeated Games"
  National Tsing Hua University Computer Science Department Seminar, October 2010.

- Synthesis of Strategies and Coping with Noise in Non-Zero-Sum Games"
  Hong Kong University of Science and Technology CSE Seminar, Feburary 2009.

- Accident or Intention: That is the Question (in the Noisy Iterated Prisoner's Dilemma"
  Dean's Fellow Lecture Series, Department of Computer Science, University of Maryland, College Park, September 2007.

HONORS AND AWARDS

- **Fourth-place in IROS Autonomous Drone Racing Competition.** International Conference on Intelligent Robots and Systems 2018. (Team members: Haeryang Kim and Minhyuk Park. Coach: Tsz-Chiu Au.)

- **Third-place in the Driverless Car Film Fest**, Driverless Car Summit 2012.

- **Dean's Fellowship Award**, Department of Computer Science, University of Maryland, College Park (2007–2008).

- **Third-place in the 20th Anniversary Iterated Prisoner's Dilemma Competition's "Noise" category.** Best performer among programs that had no "slave" programs feeding points to them. (2005)

- **Best Research Paper Award** for the paper "On the complexity of plan adaptation by derivational analogy in a universal classical planning framework" with Héctor Muñoz-Avila and Dana Nau in European Conference on Case-Based Reasoning (ECCBR), 2002.

- **Graduate Fellowship**, University of Maryland, College Park (2000–2002).

- **First-Class Honors**, Department of Computer Science, HKUST (1997).

- **Second-place in ACM Hong Kong Scholastic Programming Contest** (1997).

- **Kwong On Bank Scholarship** (1995)

- **Kiangsu-Chekiang College Scholarship** (1992)

SOFTWARE DEVELOPMENT

- Algorithms for Vehicle Formation Planning
  https://github.com/chiuau/multiplan

- The Extended Goal Recognition Design Search Algorithm
  https://github.com/chiuau/AAAI22-egrd

- The AIM4 Traffic Simulator
  http://www.cs.utexas.edu/~aim

- UTCS Gates Building Prediction Market
  http://www.cs.utexas.edu/gbpm

LANGUAGE SKILLS

Proficient in English and Chinese (Cantonese and Mandarin). Basic Korean language skills for surival in Korea.