

CHIA-CHENG (JERRY) YEN

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RESEARCH INTERESTS

- Reinforcement Learning, Traffic Networks, Cyber-security, WSNs

EDUCATION

PhD student in Computer Science University of California, Davis	09/2017-present
• Current GPA: 3.86/4.0	
Master of Science in Computer Science National Tsing Hua University, Hsinchu, Taiwan	09/2012-07/2014
• Overall GPA: 4.27/4.3 (50% Academic Average and 50% Thesis)	
Bachelor of Science in Computer Science and Information Engineering Fu Jen Catholic University, Taipei, Taiwan	09/2008-06/2012
• Overall GPA: 3.96/4.0 (Major GPA: 4.0/4.0)	
• Best Ranked 1 st , Average Ranked 2 nd in class	

RESEARCH EXPERIENCES

Algorithms and Theory Lab (Advisor: Professor Dipak Ghosal) University of California, Davis	09/2017-present
• <u>Backpressure-based Schemes for Maximizing Throughput at Multiple Intersections</u> [3] <ul style="list-style-type: none">• Apply the network model to schedule traffic signal controls for multiple intersections• Security analysis on Backpressure-based schemes	
• <u>Delay-based Reinforcement Learning for Multiple Intersections</u> <ul style="list-style-type: none">• Apply SARSA, SARSA λ, and Q-learning for scheduling	
Visual Communication Lab (Advisor: Professor Jia-Shung Wang) National Tsing Hua University, Hsinchu, Taiwan	09/2012-07/2014
• <u>Distributed Delivery of Videos over Ultra-dense Networks</u> [4][6][7] <ul style="list-style-type: none">• Deploy distributed storage using LT codes on cloud platform for popular videos• Evaluate distributed delivery techniques for hot videos over ultra-dense wireless environments	
• <u>Clustering Algorithm for Gene Expression Data</u> [2] <ul style="list-style-type: none">• Affinity propagation-based clustering algorithm for time-series gene expression data• Outperform other methods when the same datasets were used in the evaluation	
• <u>Data Compression in WSNs</u> [1][5] <ul style="list-style-type: none">• Tree-structured linear approximation with optimal RD control method for IoT Data• Considering the heterogeneity of sensors simultaneously using the R-D distortion allocation	

PUBLICATIONS

Journal Papers

- [1] Chia-Cheng Yen, Chu-Ming Wang, Wan-Yane Yang, and Jia-Shung Wang, "Homogeneous and Heterogeneous IoT Data Compression using Tree-Structured Linear Approximation Approach," *IEEE Sensors Journal*, 2018, **Submitted**.
- [2] Tai-Yu Chiu, Ting-Chieh Hsu, Chia-Cheng Yen, and Jia-Shung Wang, "Interpolation based consensus clustering for gene expression time series," *BMC Bioinformatics*.2015;16:117.

Conference Papers

- [3] Chia-Cheng Yen, Dipak Ghosal, Michael Zhang, Chen-Nee Chuah, and Hao Chen, "Falsified Data Attack on Backpressure-based Traffic Signal Control Algorithms," *IEEE Vehicular Networking Conference*, 2018, **Accepted**.
- [4] Yi-Ting Chen, Chia-Cheng Yen, Yu-Tai Lin, and Jia-Shung Wang, "Cooperative Caching Plan of Popular Videos for Mobile Users by Grouping Preference," *IEEE 16th International Conference on Pervasive Intelligence and Computing (PiCom)*, 2018.
- [5] Chu-Ming Wang, Chia-Cheng Yen, Wan-Yane Yang, and Jia-Shung Wang, "Tree-Structure Linear Approximation for Data Compression over WSNs," *IEEE 12th International Conference on Distributed Computing in Sensor Systems (DCOSS)*, 2016.
- [6] Chia-Cheng Yen and Jia-Shung Wang, "Distributed Delivery of Popular Videos over Ultra-Dense Networks," *IEEE Symposium on Computers and Communication (ISCC)*, 2015.
- [7] Hsien-Tzu Chiu, Chia-Cheng Yen, and Jia-Shung Wang, "A Framework of Temporal Data Retrieval for Unreliable WSNs Using Distributed Fountain Codes," *IEEE 9th International Conference on Mobile Ad-hoc and Sensor Networks (MSN)*, 2013.

WORK & TEACHING EXPERIENCES

Teaching Assistant, <i>Department of Computer Science</i> University of California, Davis, CA, USA <ul style="list-style-type: none">ECS 10, ECS 50Led discussion classes and assisted students with programming and examining	03/2018-present
Graduate Student Researcher, <i>Algorithms and Theory Lab</i> University of California, Davis, CA, USA <ul style="list-style-type: none">Research topics including Reinforcement Learning, Traffic Signal Control, and Security	09/2017-present
Research Assistant, <i>Advanced Network Technologies and Services Lab</i> Institute of Information Science, Academia Sinica, Taiwan <ul style="list-style-type: none">Research topics including Wireless Networks and Machine Learning	04/2017-08/2017
Research Assistant, <i>Visual Communication Lab</i> National Tsing Hua University, Hsinchu, Taiwan <ul style="list-style-type: none">Research topics including Networks, Clustering, Stereo Matching, and Data CompressionAttended IEEE 9th International Conference on Mobile Ad-hoc and Sensor Networks, International Workshop on Software Defined Sensor Networks, Dalian, China, December 11-13, 2013	09/2012-07/2014

AWARDS

NSF Travel Grant Award <ul style="list-style-type: none">Awarded to students whose research paper is accepted by VNC [3]Selection is based on student merit qualifications and financial need	12/2018
Academic Excellence Award (7 times) <ul style="list-style-type: none">Awarded to students with top 5% GPA for that semesterProvided scholarships to students with top 5% GPA for that semester	09/2008-06/2012
Second Best Project Award, Department of Computer Science and Information Engineering, FJCU <ul style="list-style-type: none">Ranked 2nd out of 27 teams	11/2011

SELECTED TERM PROJECTS

Online Ticketing System, <i>Department of Computer Science and Information Engineering, FJCU</i> <ul style="list-style-type: none">Utilized Oracle to build up an online ticketing system for railwaySupported multiple users for simultaneous booking
Multimedia Sharing System, <i>Department of Computer Science and Information Engineering, FJCU</i> <ul style="list-style-type: none">Shared movies or music with friends through MSNUtilized peer-to-peer communication and adjusted transmission rate dynamicallyApplied distributed streaming mechanism and circular buffer techniqueAwarded second place prize
Stereo Matching, <i>Visual Communication Lab</i> <ul style="list-style-type: none">Implemented Horizontal and Vertical Consideration on Cost InitializationImplemented Domain Transform on Cost AggregationImproved disparity estimation method

PROGRAMMING LANGUAGES

- Proficient with:** C/C++, Java, Matlab
- Comfortable or Familiar with:** Python, Assembly