Victoria G. Crawford

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Research Interests

Combinatorial optimization problems arising in machine learning, big data algorithms, submodular optimization, approximation algorithms.

Academic Appointments

2022– **Assistant Professor**, Department of Computer Science & Engineering, Texas A&M University.

Education

2022 **PhD in Computer Engineering**, Department of Computer & Information Science and Engineering, University of Florida.

2014 **Master of Science in Mathematics**, Department of Mathematics, University of Florida.

2012 **Bachelor of Science in Mathematics**, Department of Mathematics, University of Florida.

Teaching

Spring 2023, Fall 2023 **CSCE 689 Algorithms for Big Data**, Department of Computer Science & Engineering, Texas A&M University.

Awards

- **2023** Paper selected for oral presentation at AISTATS 2023
- **2019** Scholarship to attend Grace Hopper Celebration
- **2019** IJCAI Travel Award
- **2019** ICML Travel Award
- **2019** Gartner Group Grad Fellowship
- **2017** Invited to Best Papers of ICDM Special Issue
- **2017** Harris Fellowship
- **2016** Graduate School Fellowship from the University of Florida
- **2015** Employee of the Month at Gleim Publications
- **2014** Award for Outstanding Teaching from the University of Florida Department of Mathematics

Publications

- Wenjing Chen, **Victoria G. Crawford**. Bicriteria Approximation Algorithms for the Submodular Cover Problem. Advances in Neural Information Processing Systems (**NeurIPS**), 2023.
- **Victoria G. Crawford**. Scalable Bicriteria Algorithms for Non-Monotone Submodular Cover. International Conference on Artificial Intelligence and Statistics (**AISTATS**), 2023. Oral presentation (top 1.9% of submissions).
- **Victoria G. Crawford**. Faster Guarantees of Evolutionary Algorithms for Maximization of Monotone Submodular Functions. International Joint Conference on Artifical Intelligence (**IJCAI**), 2021.
- **Victoria G. Crawford**. An Efficient Evolutionary Algorithm for Minimum Cost Submodular Cover. International Joint Conference on Artifical Intelligence (**IJCAI**), 2019.
- **Victoria G. Crawford**, Alan Kuhnle, My T. Thai. Submodular Cost Submodular Cover with an Approximate Oracle. International Conference on Machine Learning (**ICML**), 2019.
- Alan Kuhnle, **Victoria G. Crawford**, My T. Thai. Scalable Approximations to k-Cycle Transversal Problems on Dynamic Networks. Knowledge and Information Systems (**KAIS**). Springer 2018.
- **Victoria G. Crawford***, Alan Kuhnle*, Christina Boucher, Rayan Chikhi, Travis Gagie. Practical Dynamic De Bruijn Graphs. **Bioinformatics**, 2018. *These authors contributed equally to this work.
- Alan Kuhnle, **Victoria G. Crawford**, My T. Thai. Network Resilience and the Length-Bounded Multicut Problem: Reaching the Dynamic Billion-Scale with Guarantees. Journal Proc. ACM Meas. Anal. Comput. Syst., 2018.
- Alan Kuhnle, J. David Smith, **Victoria G. Crawford**, My T. Thai. Fast Maximization of Non-submodular, Monotonic Functions on the Integer Lattice. International Conference on Machine Learning (**ICML**), 2018.
- **Victoria G. Crawford**, Alan Kuhnle, Md Abdul Alim, My T. Thai. Space-Efficient and Dynamic Caching for D2D Networks of Heterogeneous Users. IEEE International Conference on Mobile Adhoc and Sensor Systems (**MASS**), 2018.
- Alan Kuhnle, **Victoria G. Crawford**, My T. Thai. Network Resilience and the Length-Bounded Multicut Problem: Reaching the Dynamic Billion-Scale with Guarantees. International Conference on Measurement and Modeling of Computer Systems (**ACM SIGMETRICS**), 2018.
- Alan Kuhnle, **Victoria G. Crawford**, My T. Thai. Scalable and Adaptive Algorithms for the Triangle Interdiction

Problem on Billion-Scale Networks. International Conference on Data Mining (**ICDM**), IEEE 2017 (Invited to KAIS Journal Special Issue: ICDM Best Papers)

- A. Kuhnle, T. Pan, **Victoria G. Crawford**, M. A. Alim, and My T. Thai. Pseudo-Separation for Assessment of Structural Vulnerability of a Network. International Conference on Measurement and Modeling of Computer Systems (**ACM SIGMETRICS**), Extended abstract, 2017.

Doctoral Committees

2023– **Wenjing Chen**, Chair.
2023– **Shuo Xing**, Chair.
2023– **Vedangi Bengali**, Member.
2022– **Haiyang Yu**, Member.
2022– **Shurui Gui**, Member.
2022– **Chia-Yu Chang**, Member.

Departmental Service

2023 **Graduate Admissions Committee**, Member, Department of Computer Science & Engineering. Texas A&M University

2023 **Advisory Committee**, Member, Department of Computer Science & Engineering. Texas A&M University

Professional Service

2023 **Program Committee of NeurIPS 2023**.
2023 **Program Committee of ICML 2023**.
2023 **Reviewer for KDD 2023**.
2023 **Reviewer for AISTATS 2023**.
2023 **Reviewer for AAAI 2023**.
2021 **Program Committee of NeurIPS 2021**.
2021 **Program Committee of ICML 2021**.
2020 **Program Committee of AAAI 2021**.
2020 **Program Committee of NeurIPS 2020**.
2020 **Reviewer for JAIR**.
2019 **Reviewer for IEEE/ACM ASONAM**.
2017 **Reviewer for IEEE INFOCOM**.
2017 **Reviewer for IEEE Transactions on Networking**.
2012–2014 **Society of Industrial and Applied Mathematics(SIAM)**, Secretary.