Hoa T. Vu

CONTACT INFORMATION

Computer Science Department, San Diego State University, San Diego, CA, USA
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EMPLOYMENT AND EDUCATION

San Diego State University (2019-present)
Assistant Professor

Boston College (2018-2019)
Postdoctoral Research Fellow
Advisor: Prof. Hsin-Hao Su

University of Massachusetts Amherst
M.S. and Ph.D., Computer Science (2011-2018)
Advisor: Prof. Andrew McGregor

Ohio State University
B.S., Computer Science and Mathematics (2007-2011)

RESEARCH INTEREST

Theoretical computer science. Some topics include: graph algorithms, approximation algorithms, and sketching algorithms that arise in streaming and distributed settings.

TEACHING EXPERIENCE

San Diego State University

Combinatorial algorithms CS 660 (Fall 2019, Fall 2020, Spring 2021)
Algorithms and their analysis CS 560 (Fall 2019)

Boston College

Randomness and Computation CSCI 2244 (Spring 2019)

University of Massachusetts Amherst

Teaching Assistant for Advanced Algorithms Comp Sci 611 (Fall 2017, Fall 2018, Spring 2018)

HONORS AND AWARDS

Workshop on Data Summarization 2018 Travel Award, The University of Warwick
PODS/SIGMOD 2016 Travel Award
Computer Science Scholarship for Academic Achievement, Ohio State University (2008-2009)

WORK EXPERIENCE

Adobe Research Internship (Summer, 2016). Topic: Heavy hitters algorithms for high dimensional data streams. Mentors: Branislav Kveton and Muthu Muthukrishnan.

JOURNAL PUBLICATIONS

(Author names are in **alphabetical order** per tradition in theoretical computer science)

[1] Andrew McGregor and Hoa T. Vu. **Better Streaming Algorithms for the Maximum Coverage Problem**. In Theory of Computing Systems.

REFEREED CONFERENCE PUBLICATIONS

(Author names are in **alphabetical order** per tradition in theoretical computer science)

[1] David Harris, Hsin-Hao Su, and Hoa T. Vu. **On the Locality of Approximate Nash-Williams Forest Decomposition**. In Proceedings of the 40th ACM Symposium on Principles of Distributed Computing (PODC) 2021.

[2] Andrew McGregor, David Tench, and Hoa T. Vu. **Maximum Coverage in the Data Stream Model: Parameterized and Generalized**. In Proceedings of the 24th International Conference on Database Theory (ICDT) 2021.

[3] Hsin-Hao Su and Hoa T. Vu. **Distributed Dense Subgraph Detection and Low Outdegree Orientation**. In Proceedings of the 34th International Symposium on Distributed Computing (DISC) 2020.

[4] Hsin-Hao Su and Hoa T. Vu. **Distributed Data Summarization in Well-Connected Networks**. In Proceedings of the 33rd International Symposium on Distributed Computing (DISC) 2019.

[5] Hsin-Hao Su and Hoa T. Vu. **Towards the Locality of Vizing's Theorem**. In Proceedings of the 51st Annual ACM Symposium on the Theory of Computing (STOC) 2019.

[6] Branislav Kveton, Muthu Muthukrishnan, Hoa T. Vu, and Yikun Xian. **Finding Subcube Heavy Hitters in Analytics Data Streams**. In Proceedings of The Web Conference (WWW) 2018.

[7] Andrew McGregor and Hoa T. Vu. **Better Streaming Algorithms for the Maximum Coverage Problem.** In Proceedings of the 20th International Conference on Database Theory (ICDT) 2017. Invited and accepted to the special issue for ICDT best papers.

[8] Andrew McGregor, Sofya Vorotnikova, and Hoa T. Vu. **Better Algorithms for Counting Triangles in Data Streams**. In Proceedings of the 35th ACM Symposium on Principles of Database Systems (PODS) 2016.

[9] Andrew McGregor, David Tench, Sofya Vorotnikova, and Hoa T. Vu. **Densest Subgraph in Dynamic Graph Streams**. In Proceedings of the 40th Intl. Symposium on Mathematical Foundations of Computer Science (MFCS) 2015.

[10] Andrew McGregor and Hoa T. Vu. **Evaluating Bayesian Networks via Data Streams**. In Proceedings of the 21st Annual International Computing and Combinatorics Conference (COCOON) 2015.

[11] Michael A. Bender, Samuel McCauley, Andrew McGregor, Shikha Singh, and Hoa T. Vu. **Run Generation Revisited: What Goes Up May or May Not Come Down**. In Proceedings of the 26th International Symposium on Algorithms and Computation (ISAAC) 2015.

[12] Hoa T. Vu, Clifton Carey, and Sridhar Mahadevan. **Manifold Warping: Manifold Alignment over Time**. In Proceedings of 26th AAAI Conference on Artificial Intelligence (AAAI) 2012.

MANUSCRIPTS, THESIS & TECHNICAL REPORTS

[1] Hoa T. Vu. **Streaming Algorithms for Maximum Satisfiability**. Manuscript.

[2] Hoa T. Vu. **Data Stream Algorithms for Large Graphs and High Dimensional Data**. Doctoral Dissertation.

[3] C. Wang, B. Liu, S. Mahadevan, and Hoa T. Vu. **Sparse Manifold Alignment**. Technical Report UM-CS-2012-030

CONFERENCE AND INVITED TALKS

[1] Distributed Dense Subgraph Detection and Low Outdegree Orientation
International Symposium on Distributed Computing (DISC) 2020

[2] Towards the Locality of Vizing's Theorem
MIT Theory of Distributed Systems Seminar

[3] Finding Subcube Heavy Hitters in Analytics Data Streams
The Web Conference (WWW) 2018

[4] Better Streaming Algorithms for the Maximum Coverage Problem
International Conference on Database Theory (ICDT) 2017
Workshop on Data Summarization 2018
Dartmouth College Computer Science Theory Seminar

[5] Better Algorithms for Counting Triangles in Data Streams
ACM Symposium on Principles of Database Systems (PODS) 2016

[6] Evaluating Bayesian Networks via Data Streams
Annual International Computing and Combinatorics Conference (COCOON) 2015

[7] Manifold Warping: Manifold Alignment over Time
AAAI Conference on Artificial Intelligence (AAAI) 2012

PROFESSIONAL ACTIVITIES

Journal review

[1] 2021: Network Science, Distributed Computing

[2] 2019: Journal of Combinatorial Optimization

[3] 2018: IEEE Transactions on Knowledge and Data Engineering

Conference subreview

[1] 2021: ICALP, ESA, APPROX, DISC, FOCS, PODS, SODA

[2] 2020: SODA, FOCS

[3] 2019: APPROX, ESA, PODC, SODA

[4] 2018: SWAT, ESA, SODA

[5] 2016: PODS

[6] 2015: ESA

[7] 2014: SODA