# Hoa T. Vu

## CONTACT INFORMATION

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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 - to appear.

[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 reviewer

[1] 2021: Network Science, Distributed Computing

[2] 2019: Journal of Combinatorial Optimization

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

Conference subreviewer

[1] 2021: ICALP, ESA, APPROX

[2] 2020: SODA, FOCS

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

[4] 2018: SWAT, ESA, SODA

[5] 2016: PODS

[6] 2015: ESA

[7] 2014: SODA