

SIDDHARTH BHATIA

Homepage: <https://comp.nus.edu.sg/~sbhatia>

+65-82669044 • siddharth@comp.nus.edu.sg

EDUCATION

National University of Singapore

Ph.D. Computer Science (2018 - present)

- Presidents Graduate Fellowship

BITS Pilani

M.E. Computer Science (2018)

B.E. Computer Science (2016)

M.Sc. Mathematics (2016)

RESEARCH INTERESTS

- Streaming Anomaly Detection, Graph Mining, Scalable Machine Learning
-

HONORS AND AWARDS

1. Presidents Graduate Fellowship, Singapore (2018-2022)
 2. Invited to Google Research Graduate Symposium, 2021
 3. Research Achievement Award, NUS, 2020
 4. Popular Choice Award, Microsoft Azure Hackathon, 2020
 5. Young Researcher, ACM Heidelberg Laureate Forum, 2016
 6. Registration/Travel Grants: KDD, WWW, AAAI, NeurIPS, MSR, SIGMOD, SOSP, ICDM, HPDC, POPL, ECOOP
 7. KVPY Fellowship (2011-2016)
 8. Indian National Olympiad in Informatics, 2008
-

SELECT RECENT PUBLICATIONS

1. [Siddharth Bhatia](#), Bryan Hooi, Minji Yoon, Kijung Shin, Christos Faloutsos. "MIDAS: Microcluster-Based Detector of Anomalies in Edge Streams." AAAI Conference on Artificial Intelligence (AAAI), 2020. ([500+ stars on GitHub](#))
 2. [Siddharth Bhatia](#), Arjit Jain, Pan Li, Ritesh Kumar, Bryan Hooi. "MSTREAM: Fast Anomaly Detection in Multi-Aspect Streams." The Web Conference (WWW), 2021 ([Best Paper Candidate](#))
 3. [Siddharth Bhatia](#)^{*}, Arjit Jain^{*}, Bryan Hooi [^{*} denotes equal contribution]. "ExGAN: Adversarial Generation of Extreme Samples." AAAI Conference on Artificial Intelligence (AAAI), 2021.
 4. [Siddharth Bhatia](#), Yiwei Wang, Bryan Hooi, Tanmoy Chakraborty. "GraphAnoGAN: Detecting Anomalous Snapshots from Attributed Graphs." European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML-PKDD), 2021.
 5. Jiabao Zhang, Shenghua Liu, Wenting Hou, [Siddharth Bhatia](#), Huawei Shen, Wenjian Yu, Xueqi Cheng. "AUGSPlicing: Synchronized Behavior Detection in Streaming Tensors." AAAI Conference on Artificial Intelligence (AAAI), 2021.
-

MANUSCRIPTS UNDER REVIEW

1. [Siddharth Bhatia](#), Mohit Wadhwa, Philip S. Yu, Bryan Hooi. "Sketch-Based Streaming Anomaly Detection in Dynamic Graphs." [Arxiv](#)
2. [Siddharth Bhatia](#), Arjit Jain, Shivin Srivastava, Kenji Kawaguchi, Bryan Hooi. "MEMSTREAM: Memory-Based Anomaly Detection in Multi-Aspect Streams with Concept Drift." [Arxiv](#)
3. [Siddharth Bhatia](#), Rui Liu, Bryan Hooi, Minji Yoon, Kijung Shin, Christos Faloutsos. "Real-time Anomaly Detection in Edge Streams." [Arxiv](#)
4. [Siddharth Bhatia](#), Sudipto Guha. "Semi-Supervision via Sketches."
5. Rui Liu, [Siddharth Bhatia](#), Bryan Hooi. "Isconna: Streaming Anomaly Detection with Frequency and Patterns." [Arxiv](#)

6. Shivin Srivastava, [Siddharth Bhatia](#), Lingxiao Huang, Jun Heng Lim, Kenji Kawaguchi, Vaibhav Rajan. "Dont Just Divide, Polarize and Conquer!" [Arxiv](#)
7. Yiwei Wang, Yujun Cai, Yuxuan Liang, Henghui Ding, Changhu Wang, [Siddharth Bhatia](#), Bryan Hooi. "Adaptive Data Augmentation on Temporal Graphs."
8. Ying Sun, Wenjun Wang, Nannan Wu, [Siddharth Bhatia](#), Yang Yu, Wei Yu. "AAAN: Anomaly Alignment in Attributed Networks."
9. Jie Zhang, Nannan Wu, Wenjun Wang, Ying Sun, [Siddharth Bhatia](#). "FADMAN: Federated Anomaly Detection across Multiple Attributed Networks."
10. Xiaobing Sun, Wenjie Feng, Shenghua Liu, [Siddharth Bhatia](#), Bryan Hooi, Xueqi Cheng. "MonLAD: Money Laundering Agents Detection in Transaction Streams."
11. Koki Kawabata, [Siddharth Bhatia](#), Rui Liu, Mohit Wadhwa, Bryan Hooi. "SSMF: Shifting Seasonal Matrix Factorization."

OLDER PUBLICATIONS

1. [Siddharth Bhatia](#), Kunal Lad, Rajiv Kumar. "Bend-optimal orthogonal drawings of triconnected plane graphs." AKCE International Journal of Graphs and Combinatorics, 2018.
2. Yash Sinha, [Siddharth Bhatia](#), Virendra S Shekhawat, G S S Chalapati. "MPLS based Hybridization in SDN." International Conference on Software Defined Systems, 2017.
3. [Siddharth Bhatia](#), Yash Sinha, Lavika Goel. "Lung Cancer Detection: A Deep Learning Approach." Soft Computing for Problem Solving, 2017
4. [Siddharth Bhatia](#), Mohan Pavan Kumar Badarla. "Parallelization of Error Weighted Hashing for Approximate k-nearest neighbor search on GPUs." IEEE International Conference on High Performance and Smart Computing, 2016.
5. Chandra Shekhar, Madhu Jain, [Siddharth Bhatia](#). "Fuzzy analysis of machine repair problem with switching failure and reboot." Journal of Reliability and Statistical Studies Special Issue, 2014.

POSTERS/WORKSHOPS

1. [Siddharth Bhatia](#), Bryan Hooi, Minji Yoon, Kijung Shin, Christos Faloutsos. "MIDAS: Microcluster-Based Detector of Anomalies in Edge Streams." KDD Workshop on Mining and Learning with Graphs (MLG), 2020.
2. [Siddharth Bhatia](#). Approximate Triangle Count and Clustering Coefficient. ACM Special Interest Group on Management of Data Conference (SIGMOD) Student Research Competition, 2018.
3. [Siddharth Bhatia](#), Yash Sinha, G S S Chalapati and Rajiv Kumar. "MPI aware routing using SDN." ACM International Symposium on High Performance Distributed Computing (HPDC), 2017.
4. [Siddharth Bhatia](#). "SmallTable." ACM International Symposium on High Performance Distributed Computing (HPDC), 2017.
5. Yash Sinha and [Siddharth Bhatia](#). "Control-data plane intelligence trade-off in SDN." IEEE Symposium on Security and Privacy (S&P), 2017.

INTERNSHIPS

Google (2021)

Anomaly Detection

Amazon Web Services (2020)

Semi-supervision in Anomaly Detection

Microsoft Research (2016)

Code Switching

University of Cambridge (2015)

Approximate Triangle Count in Large Scale Graphs

Indian Institute of Science (2014)

Parallel Hashing for Approximate k-NN Search in GPU-CPU Hybrid

Indian Space Research Organisation (2013)

3D visualization

IIT Delhi (2012)

Mobile and Ubiquitous Computing

SERVICE

Chair

- Organiser, 6th Outlier Detection and Description (ODD) Workshop, KDD 2021
- Publications Chair, 11th ACM Symposium on Cloud Computing (SOCC), 2020

Senior Program Committee Member

- 30th International Joint Conference on Artificial Intelligence (IJCAI), 2021

Program Committee Member

- 15th International Conference on Web Search and Data Mining (WSDM), 2022
- 10th International Conference on Learning Representations (ICLR), 2022
- 35th AAAI Conference on Artificial Intelligence (AAAI), 2021
- 35th Conference on Neural Information Processing Systems (NeurIPS), 2021
- ACM SIGKDD Workshop on Deployable Machine Learning for Security Defense (MLHat), 2021
- Workshop on Artificial Intelligence for Anomalies and Novelties, IJCAI, 2021
- NeurIPS Workshop on Fair AI in Finance, 2020
- ACM SIGKDD International Workshop on Mining and Learning with Graphs (MLG), 2020
- ACM SIGKDD Workshop on Machine Learning in Finance, 2020
- Workshop on Artificial Intelligence for Anomalies and Novelties, IJCAI, 2020

TALKS

[Alan Turing Institute](#)
[Amazon](#)
[Data+AI Summit](#)
[Data Science Congress](#)
[DataScience SG](#)
[Knowledge Graphs Meetup](#)
[MIT](#)
[New York University](#)
[RSA Conference](#)
[Security Weekly](#)

PRESS COVERAGE

[ACM TechNews](#)
[Alhub:1, 2](#)
[AI Trends](#)
[Analytics India Magazine: 1 2](#)
[Hacker News](#)
[Hacker Noon](#)
[insideBIGDATA](#)
[KDnuggets:1, 2](#)
[Lionbridge](#)
[MarkTechPost](#)
[MarTech](#)
[Microsoft Azure](#)
[Towards AI](#)
[Towards Data Science](#)
[Unite.AI](#)

TEACHING

National University of Singapore: Teaching Assistant

- DSA5102: Foundations of Machine Learning (Fall 2020)
- TIC1001: Introduction to Computing and Programming I (Fall 2020)
- CS5228: Knowledge Discovery and Data Mining (Spring 2020)
- BT5151: Foundation in Data Analytics II (Spring 2020)
- TIC1002: Introduction to Computing and Programming II (Spring 2020)
- TIC2002: Introduction to Software Engineering (Fall 2019)
- TIC1001: Introduction to Computing and Programming I (Fall 2019)

BITS Pilani: Teaching Assistant

- CS F211: Data Structures and Algorithms
- CS F212: Database Systems
- CS F372: Operating Systems

MENTORING / ADVISING

- Rui Liu, National University of Singapore
- Arjit Jain, IIT Bombay
- Ritesh Kumar, IIT Kanpur
- Rama Rohit Reddy, IIIT Hyderabad
- Mohit Wadhwa, LinkedIn
- Prateek Chanda, Microsoft Research

MAILING ADDRESS

13, Computing Drive
National University of Singapore
Singapore, 117417