Kapil Vaidya

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Revised 9/2021

Education

Massachusetts Institute of Technology 2018 - Present
Ph.D, Computer Science.
Advisor: Tim Kraska

Indian Institute of Technology, Bombay 2014 - 2018
B. Tech.(Hons.), Computer Science.

Publications

1. **SNARF: A Learning-Enhanced Range Filter**. Kapil Vaidya, Eric Knorr, Subarna Chatterjee, Andreas Kipf, Stratos Idreos, Michael Mitzenmacher and Tim Kraska. *Preprint.*

2. ***Leveraging Query Logs and Machine Learning for ParametricQuery Optimization****. Kapil Vaidya, Anshuman Dutt, Vivek Narasayya and Surajit Chaudhari. Preprint.*

3. ***Partitioned Learned Bloom Filter.*** *Kapil Vaidya, Eric Knorr, Michael Mitzenmacher, and Tim Kraska. In* International Conference on Learning Representations*, 2021*

4. ***The Case for a Learned Sorting Algorithm.*** *Kapil Vaidya*, Ani Kristo*, Ugur Çetintemel, Sanchit Misra, and Tim Kraska. In* Proceedings of the 2020 ACM SIGMOD International Conference on Management of Data*, SIGMOD '20, page 1001–1016, New York, NY, USA, 2020. Association for Computing Machinery*

5. ***When Are Learned Models Better Than Hash Functions?.*** *Kapil Vaidya*, Ibrahim Sabek*, Dominik Horn, Andreas Kipf, and Tim Kraska. AiDB Workshop @ VLDB 2021.*

6. ***Defeating duplicates: A re-design of the LearnedSort algorithm.*** *Ani Kristo, Kapil Vaidya, and Tim Kraska. AiDB Workshop @ VLDB 2021.*

7. ***Ultra-Fast Bit-Level Frequency-Hopping Transmitter for Securing Low-Power Wireless Devices.*** *Rabia Tugce Yazicigil, Phillip Nadeau, Daniel Richman, Chiraag Juvekar, Kapil Vaidya, and Anantha P. Chandrakasan. In* 2018 IEEE Radio Frequency Integrated Circuits Symposium (RFIC)*, pages 176–179, 2018*

8. ***Data-Centric Dynamic Partial Order Reduction.*** *Marek Chalupa, Krishnendu Chatterjee, Andreas Pavlogiannis, Nishant Sinha, and Kapil Vaidya.* Proc. ACM Program. Lang.*, 2(POPL), December 2017*

Service

- TKDE External Reviewer 2021
- IEEE Transactions on Pattern Analysis and Machine Intelligence External Reviewer 2020

Internships

Research Intern, Microsoft Research Summer 2020
Used ML techniques to leverage query logs in order to improve parametric query optimisation.
Advisor: Anshuman Dutt, Vivek Narasayya, Surajit Chaudhari

Research Intern, MIT Summer 2017
Demonstrated selective jamming of the BLE protocol using CC2541 chip.
Advisor: Anantha Chandrakasan

Research Intern, IST Austria Summer 2016
Designed a new algorithm to efficiently perform model checking of concurrent programs.
Advisor: Krishnendu Chatterjee

Teaching Assistant-ships

- Database Systems, Spring 2020-21
- Automata Theory, Spring 2017-18
- Digital Logic Design, Spring 2016-17
- CS 101, Fall 2016-17

Selected Awards

- Aditya Birla Fellowship, 2014-18
- Institute Academic Prize, 2015
- Kishore Vaigyanik Protsahan Yojana (KVPY), 2013-14
- National Talent Search Fellowship, 2012