Matthew Perron

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Education

Ph.D. Computer Science, Massachusetts Institute of Technology EECS (exp.) 2024

M.S. Computer Science, Carnegie Mellon University, CSD 2017

B.S. Computer Science, Rochester Institute of Technology 2013
Minors: Japanese Language/Japanese Language and Culture
Study Abroad: Sophia University, Tokyo, Japan 2010-2011

Experience

Research Assistant, MIT CSAIL 2017–2023
Advised by Samuel Madden
Collaborators: David DeWitt, Raul Castro Fernandez, Tim Kraska, Michael Stonebraker
Research Topics: Cloud Analytical Databases, Query Reoptimization, Cloud Database Benchmarking

Intern, Amazon Redshift Summer 2020 and Summer 2021
Supervised by Ippokratis Pandis
- Researched techniques for extending Redshift with elastic stateless compute resources to reduce query latency.
- Received patent for this work.

Research Intern, Microsoft Research,Data Management, Exploration and Mining Group Summer 2018
Supervised by Srikanth Kandula, Surajit Chaudhuri
- Researched techniques for cardinality estimation using machine learning.

Teaching Experience

Teaching Assistant, MIT 6.S080: Software Systems for Data Science Fall 2019
- Ran office hours once weekly for a class of 74 students.
- Designed and graded half of course assignments
- Gave input on syllabus
- Gave a guest lecture

Guest Lecture, MIT 6.887: Machine Learning For Systems Fall 2021
- Gave a guest lecture on Spark execution to a class of 24 students.

Teaching Assistant, MIT Brave Behind Bars Summer 2023
- Ran twice weekly sessions with small groups of incarcerated students, reinforcing course material.

Other Activities

President MIT Rowing Club 2020-2022
- Responsible for the period during and after COVID pandemic, growing the club to 100 members.
- Planned season details, arranged coaches, and coach payments.
- Recruited club officers, organized regular officer meetings.

New Member Manager MIT Rowing Club 2022-2023
- Responsible for communicating with prospective club members.

Member CSAIL Researcher Council 2021-2023
- Participated in regular meetings with the lab director.
- Brought concerns from students to the attention of lab administration.

Mentor MIT Graduate Application Assistance Program 2020
- Advised two students from underrepresented minorities in revising PhD application materials over several meetings.
- Both students now enrolled in PhD programs.

TALKS	University of Chicago ChiData Group	April 2020
	Databricks	June 2020
	IBM	Sept 2020

HONORS & AWARDS	**NSF GRFP Honorable Mention**	2017
	Irwin Mark Jacobs (1957) and Joan Klein Jacobs Presidential Fellow	2017-2018

PUBLICATIONS

[1] Matthew Perron, Michael Cafarella, Raul Castro Fernandez, David DeWitt, and Samuel Madden. Cackle: Analytical workload cost and performance stability with elastic pools (to appear). *Proc. ACM Manag. Data*, 1(1), December 2024

[2] Matthew Perron, Raul Castro Fernandez, David DeWitt, and Samuel Madden. Starling: A scalable query engine on cloud functions. In *Proceedings of the 2020 ACM SIGMOD International Conference on Management of Data*, SIGMOD '20, page 131–141, New York, NY, USA, 2020. Association for Computing Machinery

[3] Junjay Tan, Thanaa Ghanem, Matthew Perron, Xiangyao Yu, Michael Stonebraker, David DeWitt, Marco Serafini, Ashraf Aboulnaga, and Tim Kraska. Choosing a cloud dbms: architectures and tradeoffs. *Proceedings of the VLDB Endowment*, 12(12):2170–2182, 2019

[4] Matthew Perron, Zeyuan Shang, Tim Kraska, and Michael Stonebraker. How i learned to stop worrying and love re-optimization. In *2019 IEEE 35th International Conference on Data Engineering (ICDE)*, pages 1758–1761. IEEE, 2019

[5] Andrew Pavlo, Gustavo Angulo, Joy Arulraj, Haibin Lin, Jiexi Lin, Lin Ma, Prashanth Menon, Todd C Mowry, Matthew Perron, Ian Quah, et al. Self-driving database management systems. In *CIDR*, volume 4, page 1, 2017

[6] Joy Arulraj, Matthew Perron, and Andrew Pavlo. Write-behind logging. *Proceedings of the VLDB Endowment*, 10(4):337–348, 2016

PATENTS

[7] Ippokratis Pandis and Matthew James Perron. Selecting between hydration-based scanning and stateless scale-out scanning to improve query performance, June 22 2023. US Patent App. 18/171,245