MIT CSAIL

DATA SYSTEMS GROUP

BIG DATA

The Data Systems Group conducts research on all areas of database systems and information management.

Faculty Leads:

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CSAIL / MIT

Website:
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Location:
The Data Systems Group is located in the Ray and Maria Stata Center at MIT.

Research Group Address:
Data Systems Group
MIT CSAIL
32 Vassar Street
Cambridge, MA 02139

Research Vision
Our mission is to build new data management systems and investigate existing and emerging compute architectures, apps, and platforms to improve systems performance and help users process and make sense of data.

Areas of Research
- Database systems
- Networked and distributed systems
- Data science and applied machine learning

Research Activities
- Instance optimized data structures and systems
- Knowledge graphs
- Information extraction
- Video data querying
- DBOS: data-centric operating systems
- Mapping roads with satellite imagery and GPS data
- Optimizing data intensive systems with machine learning
- Starling: Query optimization for cloud services
- Large-scale data discovery
- Temporal graph processing
- Multi-modal data fusion
- Data debugging

"We build software systems for working with data at scale, focusing on both structured relational (tabular) data and novel emerging data types like text, imagery, and graphs."

– *Samuel Madden*

In the News
- Researchers from Data Systems developed instance-optimized systems that use machine learning to automatically re-organize a dataset's storage layout based on the types of queries that its users make.

- Data Systems researchers founded a CSAIL spin-off that helps life-science companies turn data into new insights with a new type of computational database management system.

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Industry Applications
- Big data
- Applied machine learning
- Data science
- Internet of things

Current People in the Data Systems Group

Principal Investigators
Michael Cafarella
David DeWitt
Tim Kraska
Sam Madden
Mike Stonebraker

Postdocs, Graduate Students, and Researchers
Oscar Moll
Lei Cao
Joana Fonseca-Matos
Favyen Bastani
Sivaprasad Sudhir
Tianyu Li
Matt Perron
Wenbo Tao
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Laurent Bindshaedler
Ryan Marcus
Ibrahim Sabek
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Ani Kristo
Markos Markakis
Amadou Ngam
Leonhard Speigelberg
Kapil Vayda
Geoffrey Yu
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