

COMPUTATIONAL PERCEPTION & COGNITION



Computational Perception & Cognition focuses on combining methods from computer science, neuroscience, and cognitive science to explain and model how perception and cognition are realized in human and machine.



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CSAIL /MIT

Location:

The Computational Perception & Cognition research group is located on the fourth floor of the Ray and Maria Stata Center, Room 32-D432.

Website:

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Research Group Address:

Computational Perception & Cognition MIT CSAIL 32 Vassar Street, 32-D432 Cambridge, MA 02139

Research Vision

The exponential growth of technology has opened the door to paradigm-shifting scientific discoveries, but our limited understanding of the human mind leaves us standing at the threshold. Our research accelerates the rate at which discoveries are made by solving problems through a multi-disciplinary way of thinking, contributing to our understanding of how humans encode, process, retain, predict, and imagine.

Areas of Research

- Computational neuroscience: capturing when, where, and in what form information flows through the human brain during mental operations
- Computational cognition: facilitating communication between natural and artificial systems.
- Computer vision: building deep learning models of object, place, and event recognition

Research Activities

- Deep-learning approaches and reasoning tools to explain AI models
- High-level recognition problems including attention, memory, and image memorability
- Advancements in explaining how the human brain sees and recognizes objects using computer vision modeling

Industry Applications

- Big Data
- Deep learning
- Graphic design
- Computer vision



"What used to be six years in computer science milestones is now six months: at that pace, we will witness several technological revolutions in a single decade."

Aude Oliva, MIT CSAIL

In the News

- A new artificial intelligence model in the GANalyze study shows what details stand out that make a picture memorable, reported <u>MIT News</u>.
- The <u>BBC TV show QI</u> (Quite Interesting) featured the research group's Hybrid Monroe Einstein picture.
- The MIT-IBM Moments in Time Dataset, according to <u>MIT Technology Review</u>, teaches AI systems to interpret dynamic actions using video clips.

Current Researchers, Postdocs, and Graduate Students in the Group

Dr. SouYoung Jin Dr. Matthew Monfort Alex Andonian Camilo Fosco Benjamin Lahner Bowen Pan

