MIT CSAIL
ALLIANCES

MIT COMPUTER SCIENCE AND ARTIFICIAL INTELLIGENCE LABORATORY

MachineLearningApplications@CSAIL
General Information

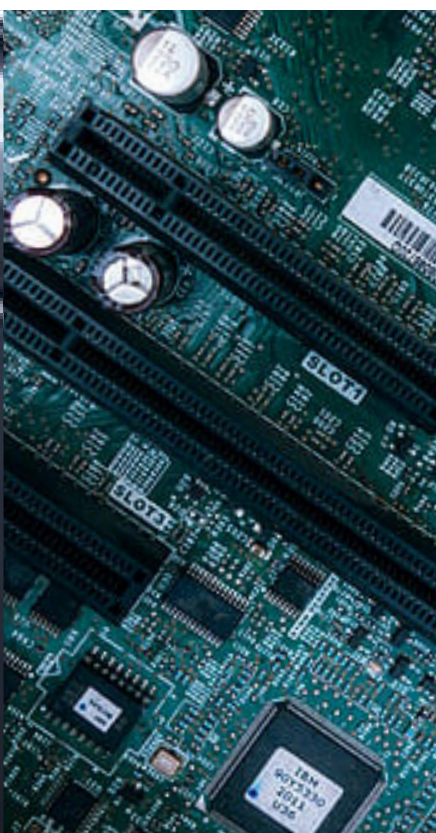**New Applications**

Workforce Development

Technological Vision

MESSAGE
from the
DIRECTOR

Welcome to MachineLearningApplications@CSAIL!

On September 3, 2020, CSAIL launched its newest initiative, MachineLearningApplications@CSAIL (MLA@CSAIL), led by renowned researcher and MIT CSAIL Director, Professor Daniela Rus. As part of this initiative, you will be connected to cutting edge research, new technologies, top talent and innovative new startups.

CSAIL is the largest lab at MIT with almost 1,200 people and over 900 active projects. By connecting with CSAIL, you are connecting to all 5 schools, 1 college, and 11 different departments across MIT. This diversity and spirit of collaboration makes CSAIL a unique, visionary, and entrepreneurial lab with new approaches and technologies that will impact the world in the years to come.

As a member of MLA@CSAIL, your company is represented on the Executive Board, which will work with researchers to craft problem statements of current challenges and vote on selecting projects for funding. Additionally, members of your organization may attend the lectures, workshops, and general meetings of the other initiatives (SystemsThatLearn@CSAIL, FinTech@CSAIL, and MIT Future of Data, Trust, and Privacy – launching soon). There will be opportunities for lab visits, tech talks, startup showcases and more.

The Alliances team is here to help you make connections across the lab. Sarah Druss is the Client Relations Manager for MLA@CSAIL and will help you navigate your relationship with CSAIL. Being part of MLA@CSAIL is being part of the CSAIL community. We encourage you to share this material with others in your institution to enable your organization to take full advantage of all CSAIL has to offer.

I look forward to working with you and if you have any questions or comments, please do not hesitate to contact me.

Sincerely,

Lori Glover, J.D.
Managing Director, Global Strategic Alliances, MIT CSAIL
Executive Director, MachineLearningApplications@CSAIL
Executive Director, FinTech@CSAIL
Executive Director, MIT Future of Data, Trust, and Privacy
Executive Director, SystemsThatLearn@CSAIL

ENGAGEMENT PATHS

Leveraged Resources: Existing Projects

Member companies will have access to research and testing opportunities in several current non-industry sponsored projects at CSAIL, as well as provide guidance for new seed projects as part of the collaborative initiative.

Membership Model

Through initiatives, member companies engage in close interactions with researchers and students in the space. Member companies will have the opportunity to interact with multiple research projects that span the full spectrum of machine learning in various industry sectors. We will collaborate closely with industry to provide real-world applications and drive impact.

Benefits

MachineLearningApplications@CSAIL industry partners will:

- Participate in the MachineLearningApplications@CSAIL Advisory Board. Each member company will have one (1) representative on the board. The board will advise the initiative on industry needs, provide feedback on existing research and advise future research direction through seeded projects. Additionally, the board will provide guidance on professional programming to assist with workforce development and have the opportunity to be part of the programs developed. This board will help shape the priorities of the initiative.

- Access in-depth exploration of CSAIL research in machine learning and data analytics. As part of this initiative, we will leverage the work of 13+ existing researchers. Members will have unprecedented access to the research and the research teams.

- Test application of tools developed to real-world situations and explore new projects.

- Participate in in-depth interactions and shared learning on topics of particular interest to each company. Close interaction with the researchers engaged in what matters most to your company.

- Members will be invited to attend one (1) annual meeting per year and may send up to 10 representatives to enable broad exposure to teams who are working on these issues. Members will also be invited to participate in the MachineLearningApplications@CSAIL lecture series and workshops held throughout the year.

- As a member of a CSAIL initiative, companies can attend the meetings, lectures and workshops of other initiatives, though not vote on the other boards.

Benefits *(continued)*

- Access additional research groups, researchers, and students within MIT's Computer Science and Artificial Intelligence Laboratory through CSAIL's Alliance Program (CAP) at the Affiliate level. Details include:

- Access to the lab-wide annual 3-day member-only Alliances Annual Meeting held each year in addition to MachineLearningApplications@CSAIL Annual Meeting.

- Connect with the latest CSAIL research from across the groups: Big Data, Wireless, Robotics, HCI, Computer Vision, Security/Crypto, Natural Language, Computational Biology, Algorithms, Architecture, Theory, Artificial Intelligence and Machine Learning.

- Access technical talks from our world-renowned researchers and visiting researchers held on campus each month both live and virtually.

- A "Student Profile Book" containing resumes and research summaries of current CSAIL students published each year as well as a searchable online database.

- Advertise open position announcements within CSAIL.

- Two tech talks/info sessions per academic year.

- Company logo included on CSAIL Alliance Program site and in conference material.

- Members of your company are welcome to visit CSAIL for a private lab visit, tour, demos and meeting with faculty/researchers.

- Network with faculty, students and other members at networking events throughout the year.

- Full access to the member-only site with search function: papers, student projects, resume book, research, tech talk and seminar videos, demos, conference slides, business use cases and more.

- 10% discount on professional education classes through MIT school of Engineering.

- 15% discount on open enrollment executive education courses with MIT Sloan School of Management.

- 20% discount on CSAIL/Schwarzman College of Computing professional development programs.

- Access to First Friday lunches throughout the academic year.

- Members receive research briefings/ and/or research summaries highlighting the latest CSAIL. research 3-4 times per year

Optional Engagement Paths

In addition to accessing the existing research and shared learning on specific topics of interest, each member company may also enter into company–specific activities such as:

Sponsored Research
If a member company becomes interested in a particular research project and wants to sponsor future development of that project, we can work with members to scope the project and additional funding required. All sponsored research is handled through MIT's Office of Sponsored Programs.

Visiting Industry Researcher (with or without sponsored research)
Member companies will be able to leverage the CSAIL Visiting Industry Researcher Program to embed a researcher within a specific research group. The visiting researcher remains an employee of the member-company and works alongside the researchers and students in a specific area at CSAIL. In addition, the Visiting Industry Researcher is connected to CSAIL/MIT with a customized schedule of lectures, workshops, classes, meetings and events. The CSAIL Alliance Program coordinates this effort and meets monthly with all industry visitors.

Consulting
Researchers may be available for consulting opportunities with our industry partners. Consulting agreements are arranged between the researcher and the member company directly.

Technology Licensing
Member companies interested in licensing developed software and patentable inventions may work with our MIT Technology Licensing Office (TLO) for licensing agreements and options.

Intellectual Property

The goal of MachineLearningApplications@CSAIL is to conduct research that will significantly impact the field of machine learning over the next decade and beyond. Tools developed through projects funded under this initiative may be available to our member companies through MIT's Open Source license unless specifically stated otherwise.

Publication
The majority of the research results will be broadly disseminated via publication. We realize that confidentiality is a particular concern to our partners and we have standard practices to ensure no partner's proprietary information will be released in any publication. Papers generated from this research initiative will be available to our partners BEFORE any publication and in parallel with conference submission.

Open-source and Licensing
Members will be able to utilize software tools developed through this initiative for research testing internally. Additionally, we anticipate that the software tools developed will be released as open source and available for use by member companies via MIT's open source license.

Intellectual Property *(continued)*

Member Intellectual Property
All pre-existing IP owned by the member coming into this initiative will remain the member's intellectual property.

Creation of Joint Intellectual Property
If member representatives work with MIT researchers on projects to invent and/or author inventions and software, US laws and rules with regard to joint-ownership of patents and copyrights will be applied. Please note, however, if members make significant use of MIT resources, funds, and/or facilities or invent in area outside the scope of initiative projects, their IP rights will be assigned to MIT.

THE CURRENT STATE MACHINE LEARNING

Machine learning (ML) is key to the digital transformation that we are seeing across organizations, opening up pathways to greater innovation and enhanced productivity. It is already having a significant impact in industry as companies build more robust models capable of analyzing and interpreting big data, integrate neural networks capable of deep learning into the supply chain, and leverage artificial intelligence (AI) systems for faster and more informed decision-making. The results are wide-reaching, impacting all industries at various levels and functions, including sales and marketing, customer engagement, manufacturing, and security.

The state of machine learning — development in tools, applications, and hardware — continues to progress each year. To remain competitive, organizations must know how to leverage and integrate ML across their business, but many companies are unsure of how and where they should use ML, how they know they can trust the accuracy of underlying mathematical models, and how to build an empowered digital workforce.

Research out of MIT's world-renowned Computer Science and Artificial Intelligence Lab (CSAIL) is helping companies prepare their business and their workforce for the ML revolution. The MachineLearningApplications@CSAIL Initiative focuses on the latest ML technologies, tackling multiple industry challenges and research applications to drive ML in business forward. The research includes solutions in big data and data visualization, image recognition, the Internet of Things (IoT), supply chain and automation, and more.

Big Data and Visualization
Most businesses are awash in complex data, so being able to understand and visualize big data gives companies an advantage. CSAIL researchers are using Bayesian methods in large-scale data settings by developing algorithms that create compact summaries of large quantities of data—eliminating the need to look at the whole dataset.

(continued)

MachineLearningApplications@CSAIL

Big Data and Visualization *(continued)*

Coresets (data reduction) are also being used for big data applications, such as a recent project accelerating popular machine-learning algorithms and another extracting the activity summaries of social media users from underlying data exchanges in a compact way.

Image Recognition

Myriad breakthroughs are emerging in image recognition technologies, from autonomous driving to facial recognition. The goal, ultimately, is to help machines see and recognize visual input as well as humans do. Researchers at MIT are training complex neural networks to generate models of faces, so that machines can better learn at a systems-level how the brain processes faces. Computer scientists are also developing novel training methodologies for image classification models, such as supervised contrastive learning. These advances have all manner of applications in enterprise and even health care when optimizing medical imagery.

Internet of Things

By connecting more people to more devices, IoT systems are able to provide a lot more data than was previously possible. Researchers in the machine-learning space are creating user-friendly, intelligent IoT systems that manage and learn from this data in real time. Secure IoT is useful in retail and e-commerce, helping companies monitor customer satisfaction, track products throughout the supply chain, and reduce loss such as food waste. It can also help businesses monitor worker and consumer energy consumption and activities in a self-supervised manner.

Supply Chain and Automation

Combining IoT, AI, and blockchain, organizations are applying ML to plan, monitor, synchronize, and automate processes within the supply chain. Many ML systems can make recommendations, which helps supply chain managers be more flexible and efficient. To improve the efficiency of the ML systems themselves, MIT researchers are optimizing ML algorithms so that systems can automatically schedule programs for high-performance image processing and deep learning. They are also creating ML systems with robust output feedback control and curbing coding stragglers in large-scale distributed ML.

CSAIL's continuing dedication to pioneering new approaches to computing will have valuable impact in ML. Organizations that factor in these latest ML trends and technologies and think holistically will be able to implement new ML strategies and transform their workforce and way they do business.

GOVERNING BOARD

Ahold Delhaize Company
Eric Braun
Director of Innovation, Retail Business Services

Arrow Electronics
W. Victor Gao, Senior Vice President and Chief Marketing Officer

Cisco
Dr. Ramana Kompella, Head of Research, Emerging Technology and Incubation

SAP
Hans-Martin Will, Head of Innovation Center Network

MIT CSAIL
Daniela Rus, Faculty Director, MachineLearningApplications@CSAIL
Lori Glover, Executive Director, MachineLearningApplications@CSAIL
Sarah Druss, Client Relations Manager, MachineLearningApplications@CSAIL

Governing Board Bios

Eric Braun
Director of Innovation, Retail Business Services,
Ahold Delhaize Company

Eric is an expert in innovation, entrepreneurship and technology. Over his 30-year career, he has built and led teams to create forward-thinking systems and applications that have gone on to win multiple awards and create new paradigms for how work can be done. During the past 20 years, he co-founded 4 tech startups and a startup incubator, has advised hundreds of entrepreneurs and mentored many future technology and business leaders.

Eric is currently Sr. Director of Innovation at Retail Business Services, a subsidiary of Ahold Delhaize – one of the world's largest retail food groups. Eric leads a team that catalyzes ideas, spreads a culture of Lean Startup thinking and behavior and drives technology and process innovation throughout the organization. His team has developed numerous partnerships with external organizations and academic institutions. Eric is a frequent speaker and workshop facilitator on topics of Innovation, Entrepreneurship, the Lean Startup, the Culture of Innovation, and new models of Experiential Education. Prior to RBS, Eric was Head of Innovation at Intralinks – a leading FinTech company supporting M&A deals and other secure financial transactions – where he led the development of a ground-up innovation program and the supporting strategy.

W. Victor Gao
Senior Vice President and Chief Marketing Officer,
Arrow Electronics

W. Victor Gao is an American technologist and publisher. He is currently chief marketing officer and member of the executive committee at Arrow Electronics (NYSE: ARW), a Fortune 109 global engineering and supply chain company.

At Arrow, Gao leads digital transformation across the company and serves as strategy and P&L leader for Arrow's SaaS, technical publishing, and engineering marketplace businesses. He heads the company's global brand, customer experience, communications, and corporate social responsibility. Arrow has consistently ranked #1 in its industry as Fortune Most Admired Company and is widely recognized for its philanthropic work in developing countries and marginalized communities.
Prior to Arrow, Gao was vice president and general manager at Yell Group plc, the combined publishing operation of British Telecom and Telefónica. In this role, he led the turnaround of Yell's SME business and supported the United Kingdom Cabinet Office's Open For Business Initiative. Previously, he served in various leadership capacities at Microsoft and Yahoo!, and spent 14 years in EMEA and the Asia Pacific.

Gao is committed to inspiring the next generation to an interdisciplinary science and liberal arts education. He is a member of the Aspen Institute, a nonpartisan education and policy group based in Washington, D.C. A frequent public speaker on innovation, humanitarian engineering, and sustainable urban development, Gao's work has been featured in a 2019 Harvard Business School case study. He is a member of the communications committee at the Semiconductor Industry Association, the policy voice of the U.S. semiconductor industry. Gao is a regular contributor at the engineering magazine EE Times.

Dr. Ramana Kompella
Head of Research, Emerging Technology and Incubation,
Cisco

Dr. Ramana Kompella is the current Head of Research in the Emerging Technology and Incubation group at Cisco. His previous experience includes co-founding successful startups, and providing engineering leadership to build world class products currently in use in several hundreds of customers' data centers. Prior to his industry roles, he was a tenured faculty at Purdue in Computer Science Department, where he conducted research on systems and networking areas, with multi-million dollar grants from NSF and other industry sources. He co-advised several PhD and Masters students, and has co-authored 70+ publications in top networking and systems conferences such as SIGCOMM.

He was the recipient of several awards including the prestigious NSF CAREER award.

cap.csail.mit.edu/members/initiatives/machinelearningapplicationscsail

Hans-Martin Will
Head of Innovation Center Network,
SAP

Hans-Martin Will is heading up the SAP Innovation Center Network, a global organization responsible for contextualizing and pioneering emerging technologies to determine those which will be foundational for SAP's future success. Prior to joining SAP, Martin worked at Amazon, where he led several engineering efforts in the areas of machine learning at scale and distributed systems within AWS and the Alexa organization. Earlier in his career, Martin spent more than a decade at the intersection of machine learning and life sciences working in leadership roles at Merck Research Labs and the Microsoft Health Solutions Group. Martin holds a PhD in theoretical computer science from ETH Zurich, Switzerland.

Daniela Rus
Faculty Director,
MachineLearningApplications@CSAIL

Director, MIT CSAIL
Andrew and Erna Viterbi Professor, MIT EECS
Deputy Dean of Research, MIT Schwarzman College of Computing

Daniela Rus is the Andrew (1956) and Erna Viterbi Professor of Electrical Engineering and Computer Science and Director of the Computer Science and Artificial Intelligence Laboratory (CSAIL) at MIT. Rus' research interests are in robotics, artificial intelligence, and data science.

The focus of her work is developing the science and engineering of autonomy, toward the long-term objective of enabling a future with machines pervasively integrated into the fabric of life, supporting people with cognitive and physical tasks. Her research addresses some of the gaps between where robots are today and the promise of pervasive robots: increasing the ability of machines to reason, learn, and adapt to complex tasks in human-centered environments, developing intuitive interfaces between robots and people, and creating the tools for designing and fabricating new robots quickly and efficiently. The applications of this work are broad and include transportation, manufacturing, agriculture, construction, monitoring the environment, underwater exploration, smart cities, medicine, and in-home tasks such as cooking.

Rus serves as the Associate Director of MIT's Quest for Intelligence Core, and as Director of the Toyota-CSAIL Joint Research Center, whose focus is the advancement of AI research and its applications to intelligent vehicles. She is a member of the Toyota Research Institute advisory board.

Rus is a Class of 2002 MacArthur Fellow; a fellow of ACM, AAAI, and IEEE; and a member of the National Academy of Engineering and the American Academy of Arts and Sciences. She is the recipient of the 2017 Engelberger Robotics Award from the Robotics Industries Association. She earned her PhD in Computer Science from Cornell University.

MachineLearningApplications@CSAIL

Lori Glover
Executive Director, MachineLearningApplications@CSAIL

Managing Director, Global Strategic Alliances, MIT CSAIL
Executive Director, FinTech@CSAIL
Executive Director, SystemsThatLearn@CSAIL
Executive Director, MIT Future of Data, Trust, and Privacy

Lori heads Alliances for the Computer Science and Artificial Intelligence Lab (CSAIL)– the largest lab at MIT with over 1000 people and home to MIT research initiatives on Big Data, Wireless and Cyber Security. In her role at CSAIL, she is responsible for corporate and organizational engagement through the CSAIL Alliances Program, the Visiting Industry Researcher program, CSAIL startups and technology ecosystem, the professional education partnership with EdX and MIT Professional education, as well as talent acquisition/recruiting programs within CSAIL.

Lori also serves as the Executive Director of MachineLearningApplications@CSAIL, the newest initiative at CSAIL focused on bringing new applications, workforce cohesion and technological vision to industry.

She has also practiced law, taught law school and is a member of both the Massachusetts and Florida bars.

Sarah Druss
Client Relations Manager,
MachineLearningApplications@CSAIL

Sarah joined the CSAIL Alliances team as Client Relations Manager in Fall 2018. In addition to overseeing the Client Relations team, she is also responsible for a portfolio of member companies, the MachineLearningApplications@CSAIL research initiative, and the CSAIL Visiting Industry Researcher program.

cap.csail.mit.edu/members/initiatives/machinelearningapplicationscsail

MLA@CSAIL Researchers

Daniela Rus
Faculty Director, MachineLearningApplications@CSAIL
Director, MIT CSAIL
Deputy Dean of Research, MIT Schwarzman College of Computing
Professor, MIT EECS
Current Research Topics: Distributed, networked, collaborative, and autonomous robot systems
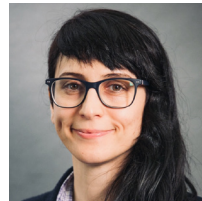

Hal Abelson
Professor

Current Research Topics:
Privacy on the World Wide Web, privacy based upon information transparency and accountability rather than access control, information technology and policy

Manya Ghobadi
Assistant Professor

Current Research Topics:
Systems for ML, Cloud infrastructure, data center networks, optical networks, hardware-software co-design models), recommender and other large scale inference problems, as well as information retrieval.nonparametric, and unsupervised learning

Tamara Broderick
Associate Professor

Current Research Topics:
Bayesian inference and graphical models — with an emphasis on scalable, nonparametric, and unsupervised learning

Polina Golland
Professor

Current Research Topics:
Building systems that enable medical image analysis and visualization

Randall (Randy) Davis
Professor

Current Research Topics:
Knowledge-based systems and human-computer interaction, developing advanced tools that permit natural multi-modal interaction with computers by creating software that understands users as they sketch, gesture, and talk
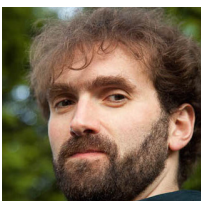
Tommi Jaakkola
Professor

Current Research Topics:
Problems in natural language processing, computational biology (e.g., regulatory models), recommender and other large scale inference problems, as well as information retrieval. nonparametric, and unsupervised learning

Fredo Durand
Professor

Current Research Topics:
Computer vision, picture generation and creation with emphasis on mathematical analysis, signal processing, and inspiration from perceptual sciences

Boris Katz
Principal Research Scientist

Current Research Topics:
Natural language understanding and generation as well as multimodal information access, knowledge representation, human computer interaction, and event recognition.

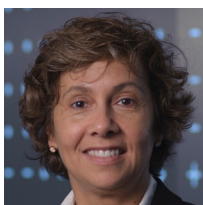**John Leonard**
Professor

Current Research Topics:
Simultaneous location and mapping, problems of navigation and mapping for autonomous mobile robots

Ankur Moitra
Associate Professor

Current Research Topics:
Provable guarantees for algorithms, various problems in machine learning

Una-May O'Reilly
Principal Research Scientist

Current Research Topics:
Scalable machine learning, evolutionary algorithms, and frameworks for large scale knowledge mining, prediction and analytics

Justin Solomon
Assistant Professor

Current Research Topics:
Geometry/numerics for dealing with 3d data

Russ Tedrake
Professor

Current Research Topics:
Control solutions for interesting (underactuated, stochastic, and/or difficult to model) dynamical systems.

Research Papers

Daniela Rus
Faculty Director, MLA@CSAIL

- [Coresets for Machine Learning Algorithms](#)
- [Robust Learning for Autonomous Vehicles](#)
- [Social Network Extraction from GPS Datasets with Coresets](#)
- [Greater Boston Food Bank](#)

Tamara Broderick
Researcher, MLA@CSAIL

- [Scalable Bayesian Inference via Adaptive Data Summaries](#)
- [Scalable Bayesian Inference with Optimization](#)
- [Finite Mixture Models are Typically Inconsistent for the Number of Components](#)

Randall (Randy) Davis
Researcher, MLA@CSAIL

- [Interpretable Machine Learning Models for the Digital Clock Drawing Test (2016)](#)

Fredo Durand
Researcher, MLA@CSAIL

- [On the Capability of Neural Networks to Generalize to Unseen Category-Pose Combinations](#)
- [Flexible SVBRDF Capture with a Multi-Image Deep Network](#)
- [Learning to Optimize Halide with Tree Search and Random Programs](#)

Manya Ghobadi
Researcher, MLA@CSAIL

- [FlexEnt: Entropy Coding to Curb Stragglers inLarge-Scale Distributed Machine Learning](#)

Polina Golland
Researcher, MLA@CSAIL

- [Enhanced Detection of Fetal Pose in 3D MRI by Deep Reinforcement Learning with Physical Structure Priors on Anatomy](#)
- [Joint Frequency-and Image-Space Learning for Fourier Imaging](#)

Tommi Jaakkola
Researcher, MLA@CSAIL

- [Prediction of Organic Reaction Outcomes Using Machine Learning](#)
- [Invariant Rationalization](#)
- [Self-Supervised Learning of Appliance Usage](#)
- [Educating Text Autoencoders: Latent Representation Guidance via Denoising](#)

Boris Katz
Researcher, MLA@CSAIL

- [Deep Compositional Robotic Planners That Follow Natural Language Commands](#)
- [Measuring Social Biases in Grounded Vision and Language Embeddings](#)
- [ObjectNet: A Large-Scale Bias-Controlled Dataset for Pushing the Limits of Object Recognition Mode](#)

John Leonard
Researcher, MLA@CSAIL

- [Characterizing Marginalization and Incremental Operations on the Bayes tree](#)
- [Multimodal Semantic SLAM with Probabilistic Data Association](#)
- [CARPAL: Confidence-Aware Intent Recognition for Parallel Autonomy](#)
- [Self-Supervised Visual Place Recognition Learning in Mobile Robots](#)

Ankur Moitra
Researcher, MLA@CSAIL

- [Classification Under Misspecification: Halfspaces, Generalized Linear Models, and Connections to Evolvability](#)
- [Tensor Completion Made Practical](#)
- [Algorithmic Foundations for the Diffraction Limit](#)
- [Learning Structured Distributions From Untrusted Batches: Faster and Simpler](#)

Una-May O'Reilly
Researcher, MLA@CSAIL

- [Dependency-Based Neural Representations for Classifying Lines of Programs](#)
- [Analyzing the Components of Distributed Coevolutionary GAN Training](#)
- [Computational Intelligence for Evaluating the Air Quality in the Center of Madrid, Spain](#)

cap.csail.mit.edu/members/initiatives/machinelearningapplicationscsail

Justin Solomon
Researcher, MLA@CSAIL

- [Polygonal Building Segmentation by Frame Field Learning](#)
- [A Computational Approach to Measuring Vote Elasticity and Competitiveness](#)
- [Model Fusion with Kullback--Leibler Divergence](#)
- [Deep Closest Point: Learning Representations for Point Cloud Registration](#)

Russell Tedrake
Researcher, MLA@CSAIL

- [Teaching Artificial Intelligence to Connect Senses like Vision and Touch](#)
- [The Surprising Effectiveness of Linear Models for Visual Foresight in Object Pile Manipulation](#)
- [FormulaZero: Distributionally Robust Online Adaptation via Offline Population Synthesis](#)
- [Soft-Bubble Grippers for Robust and Perceptive Manipulation](#)

For a full list of current papers and future projects, please visit the MachineLearningApplications@CSAIL initiative page at:

[cap.csail.mit.edu/members/initiatives/machinelearningapplicationscsail](#)
You must be logged into your website account to access the initiative researcher papers.