Overview for Corporate Members

Introduction

Artificial Intelligence comprises the complete loop from sensing to perception, learning, communications, and action. Stanford's Artificial Intelligence Lab is devoted to the design of intelligent machines that serve, extend, expand, and improve human endeavor, making life more productive, safer, and healthier.

These intelligent machines will learn everything about anything using multi-sensory information and the entire cyber world of information and knowledge. They will reason deeply and communicate like a human. They will act with situational awareness.

Affiliates Program and Member Benefits

AI is an integral part of many exciting business and consumer tools such as speech recognition, semantic search, recommendation systems, machine translation, and 3D sensing in consumer gaming. The AI Lab Affiliates Program brings all of these efforts together and provides a structure for industry to engage effectively. The affiliates program represents a new era of close engagement with a small number of major companies. It supports corporate interaction through organized retreats, an Advisory Board, and informal interactions. The goal is a bidirectional transfer of knowledge and excitement!

Corporate members provide $250,000 per year of unrestricted support with an expected three-year commitment. These funds will be used to support the research activities of faculty and graduate students as well as the other activities of the affiliates program. Members receive substantial benefits:

- Active engagement with faculty and students
- Invitations to all retreats, conferences, and seminars
- Custom hosted visits to Stanford for discussion of research topics
- Opportunities for informal interactions on research projects
- Networking with AI Lab researchers and corporate members
- Student recruiting opportunities
- Opportunity to establish a visiting researcher at Stanford (additional fee applies)
- Regular updates on AI Lab research results

Each member of the affiliates program may select up to two focus groups for a deeper engagement including periodic formal and informal interactions. A focus group is an individual professor or one of the AI Lab's major research areas (robotics, NLP, computer vision, machine learning, and computational genomics). The Agreement is considered renewed automatically upon each subsequent annual payment, and may be terminated by written notice from either Stanford University or the company to the other.

AI Lab Faculty and Research Agenda

The faculty members of the Stanford AI Lab are changing the world. Their research includes deep learning and machine learning; robotics; natural language processing; vision, haptics, and sensing; big data and knowledge base; and genomics, medicine, and healthcare. The approach is personalized, adaptive, anticipatory, communicative, and context aware.

Stanford AI Lab Faculty

- **Gill Bejerano**, Associate Professor of Computer Science, Developmental Biology and Pediatrics. Mapping genome sequence (variation) to phenotype (differences) and extracting specific genetic insights from deep sequencing measurements.

- **Jeannette Bohg**, Assistant Professor of Computer Science. Perception for autonomous robotic manipulation and grasping. Autonomy, reactivity, and robustness of biological systems when physically interacting with complex, dynamic, real-world environments.

- **Emma Brunskill**, Assistant Professor of Computer Science. Advancing theoretical understanding of reinforcement learning and interactive machine learning.

- **Ron Dror**, Associate Professor of Computer Science and, by courtesy, Molecular and Cellular Physiology. Computational biology, with an emphasis on spatial structure and dynamics at the molecular and cellular levels.

- **John Duchi**, Assistant Professor of Electrical Engineering and Statistics. Statistical learning, optimization, information theory, and computation, with a few driving goals.

- **Stefano Ermon**, Assistant Professor of Computer Science. Probabilistic reasoning and inference, machine learning, computational sustainability, and sequential decision making and control theory.

- **Ron Fedkiw**, Professor of Computer Science and, by courtesy, of Electrical Engineering. Computational algorithms for a variety of applications including computational fluid dynamics, computer graphics, and biomechanics.

- **Chelsea Finn**, Assistant Professor of Computer Science. Learning deep representations from raw sensory inputs for complex skills, enabling machines to learn through interaction without human supervision, and allowing systems to build upon what they've learned previously to acquire new capabilities with small amounts of experience.

- **Michael Genesereth,** Associate Professor of Computer Science. Computational logic and applications in enterprise management, electronic commerce, and computational law.

- **Noah Goodman**, Associate Professor of Psychology, Linguistics and Computer Science. Computational psychology, machine learning, and linguistics.

- **Carlos Guestrin,** Professor of Computer Science. Machine learning, explainability, fairness, ML systems.

- **Leonidas Guibas,** Professor of Computer Science and Electrical Engineering (by courtesy). Computational geometry, geometric modeling, computer graphics, computer vision, sensor networks, robotics, and discrete algorithms.

- **Tatsunori Hashimoto**, Assistant Professor of Computer Science. Machine learning and natural language processing.

- **Thomas Icard**, Assistant Professor of Philosophy and, by courtesy, of Computer Science. Machine learning, knowledge bases and logic.

- **Dan Jurafsky**, Professor of Linguistics and Computer Science. Natural language processing and computational linguistics including speech, dialogue, and Chinese natural language processing, as well as applications to the behavioral and social sciences.

- **Oussama Khatib**, Professor of Computer Science. Methodologies and technologies of autonomous robots, cooperative robots, human-centered robotics, haptic interaction, simulation, augmented teleoperation, and human-friendly robot design.

- **Mykel Kochenderfer**, Assistant Professor of Aeronautics and Astronautics. Advanced algorithms and analytical methods for the design of robust decision making systems.

- **Daphne Koller**, Adjunct Professor of Computer Science. Probabilistic models and machine learning to understand complex domains that involve large amounts of uncertainty.

- **Anshul Kundaje**, Assistant Professor of Genetics and Computer Science. Large-scale computational regulatory genomics.

- **Monica Lam**, Professor of Computer Science, and by courtesy, of Electrical Engineering. Natural language processing, machine learning, compilers, distributed systems, and human-computer interaction. Expert in compilers for high-performance machines.

- **James Landay**, Professor of Computer Science. Human-computer interaction, natural language processing, and autonomous vehicles. Technology to support behavior change, demonstrational interfaces, mobile & ubiquitous computing, and user interface design tools.

- **Jure Leskovec**, Associate Professor of Computer Science. Analyzing and modeling of large social and information networks as the study of phenomena across the social, technological, and natural worlds. Modeling of network structure, network evolution, and spread of information, influence and viruses over networks.

- **Fei-Fei Li**, Associate Professor of Computer Science and Psychology (by courtesy). Computer vision and machine learning, development of algorithms for image and video understanding, and underlying cognitive and neural mechanisms of human vision.

- **Percy Liang**, Assistant Professor of Computer Science and Statistics (by courtesy). Machine learning and natural language processing, particularly semantics, weakly supervised learning, statistical learning theory.

- **Scott Linderman**, Assistant Professor of Statistics. Machine learning and computational neuroscience. Statistical models for analyzing neural data, developing new statistical methodologies that are well suited to extract information from that data, and applying those methods to experimental data

- **Tengyu Ma,** Assistant Professor of Computer Science. Machine learning and algorithms, non-convex optimization, deep learning and its theory, reinforcement learning, representation learning, distributed optimization, convex relaxation, and high-dimensional statistics.

- **Chris Manning**, Professor of Linguistics and Computer Science. Natural language processing, computational linguistics, and machine learning including systems and formalisms that intelligently process and produce human languages.

- **Andrew Ng**, Adjunct Professor of Computer Science. Machine learning and statistical AI algorithms for data mining, pattern recognition, and control. New learning methods for novel applications, scalable algorithms and learning from sparse data; learning provably correct or robust behaviors for safety-critical systems.

- **Vijay Pande,** Professor of Chemistry and, by courtesy, of Structural Biology and Computer Science. Novel cloud computing simulation techniques to address problems in chemical biology. Computing methodology to break fundamental barriers in the simulation of protein and nucleic acid kinetics and thermodynamics.

- **Marco Pavone**, Assistant Professor of Aeronautics and Astronautics and, by courtesy, of Electrical Engineering and of Computer Science. Development of methodologies for the analysis, design, and control of autonomous systems, with an emphasis on self-driving cars, autonomous aerospace vehicles, and future mobility systems.

- **Chris Piech**, Assistant Professor of Computer Science. Machine learning and education.

- **Chris Potts**, Professor of Linguistics and, by courtesy, of Computer Science. Linguistics, cognitive psychology, and computer science. Computational methods to explore how emotion is expressed in language and how linguistic production and interpretation are influenced by the context of utterance.

- **Chris Re**, Associate Professor of Computer Science. Understanding how software and hardware systems will change as a result of machine learning.

- **Dorsa Sadigh**, Assistant Professor of Computer Science and of Electrical Engineering. Learning and control, formal methods, and human-robot interaction. Designing provably correct controllers for human-cyber-physical systems (h-CPS) such as semiautonomous vehicles.

- **Ken Salisbury**, Research Professor of Computer Science, Surgery, and Mechanical Engineering (by courtesy). Robotics including surgical simulation, applied medical systems, haptics, human-interactive robots, and personal robotics.

- **Silvio Savarese**, Associate Professor of Computer Science. Computational vision and geometry particularly fundamental principles, algorithms, and implementations for solving visual recognition and reconstruction problems.

- **Sebastian Thrun**, Adjunct Professor of Computer Science. Robotics, artificial intelligence, education, human computer interaction, and medical devices.

- **Jiajun Wu**, Assistant Professor of Computer Science. Computer vision, machine learning, and computational cognitive science.

- **Dan Yamins**, Assistant Professor of Psychology and of Computer Science. Neuroscience, artificial intelligence, psychology and large-scale data analysis.

- **Serena Yeung**, Assistant Professor of Biomedical Data Science and, by courtesy, of Computer Science and of Electrical Engineering. Artificial intelligence and machine learning algorithms to enable new capabilities in biomedicine and healthcare.

- **James Zou**, Assistant Professor of Biomedical Data Science and, by courtesy, of Computer Science and of Electrical Engineering. Wide range of problems in machine learning (from proving mathematical properties to building large-scale algorithms) with applications in biotech and health.

Please contact Joseph Huang, Executive Director, at Joseph.Huang@stanford.edu , or Chris Manning, Faculty Director, manning@cs.stanford.edu, for further information.

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