UC Berkeley Robotics and Intelligent Machines Lab
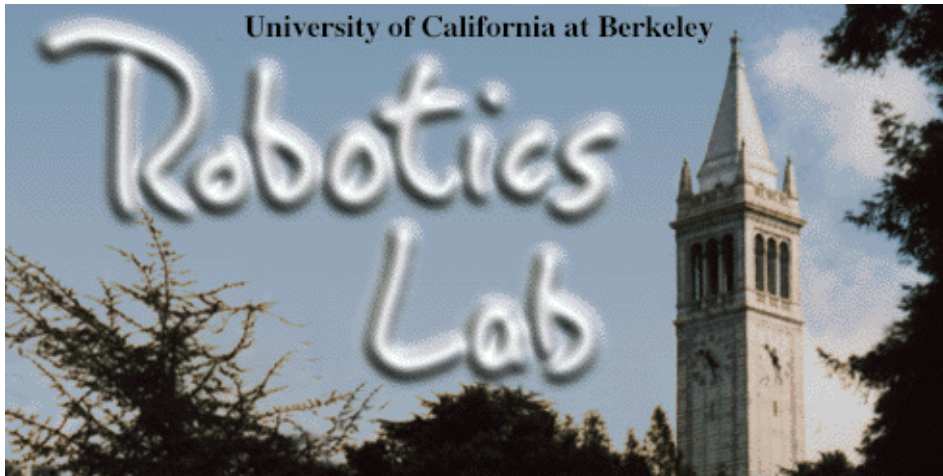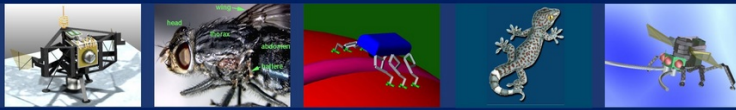

Active Groups

Biomimetic Millisystems Lab
The goal of the Biomimetics Millisystem Lab is to harness features of animal manipulation, locomotion, sensing, actuation, mechanics, dynamics, and control strategies to radically improve millirobot capabilities.

People and Robots
Cloud Robotics, Deep Learning, Human-Centric Automation, and Bio-Inspired Robotics are among the primary research themes of the CITRIS People and Robots Initiative that focuses on new theory, benchmarks, software, and approaches that address challenges in the interest of society.

Berkeley Laboratory for Automation Science and Engineering
Berkeley Laboratory for Automation Science and Engineering, directed by Professor Ken Goldberg of IEOR and EECS, is a center for research in robotics and automation, with current projects in cloud robotics, computer assisted surgery, automated manufacturing, and new media artforms.

Robot Learning Group
We investigate novel techniques in machine learning, perception and

control with applications to autonomous helicopter flight, personal robotics and surgical robotics.

The Embedded Humans ONR MURI

The Embedded Human project is a MURI research project funded by the Office of Naval Research (ONR). The participants include University of California, Berkeley; Stanford University; and University of California, Los Angeles. The goal of the project is to design systems which blend human cognitive understanding and control capability with autonomy in vehicle ensembles through collaboration among specialists in control and decision theory, artificial intelligence, robotics, neuroscience, cognitive science, and human-machine interfaces.

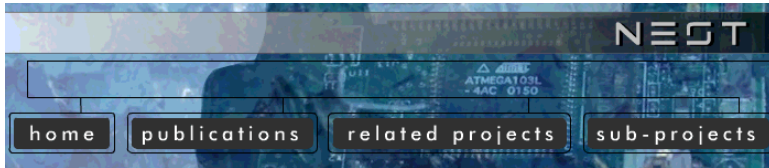## Tele-Immersion@UC Berkeley Laboratory for Automation Science and Engineering

Tele-Immersion is aimed to enable users in geographically distributed sites to collaborate in real time in a shared simulated environment as if they were in the same physical room.

BErkeley AeRobot (BEAR)

The BErkeley AeRobot (BEAR) project is a collective, interdisciplinary research effort at UC Berkeley that encompasses the disciplines of hybrid systems theory, navigation, control, computer vision, communication, and multi-agent coordination, since 1996. We currently operate six fully instrumented helicopters, in addition to many fixed- and rotary wing vehicles under development, equipped with GPS/INS, camera, and other sensors on board, which we have been using to validate our control systems design algorithms for UAVs. In addition, we also have four mobile ground-based robots for pursuit-evasion games between the ground based robots and UAVs.

Computer Vision Group

Work in Artificial Intelligence in the EECS department at Berkeley involves foundational research in core areas of knowledge representation, reasoning, learning, planning, decision-making, vision, robotics, speech and language processing. There are also significant efforts aimed at applying algorithmic advances to applied problems in a range of areas, including bioinformatics, networking and systems, search and information retrieval. There are active collaborations with several groups on campus, including the campus-wide vision sciences group, the information retrieval group at the I-School and the campus-wide computational biology program. There are also connections to a range of research activities in the cognitive sciences, including aspects of psychology, linguistics, and philosophy. Work in this area also involves techniques and tools from statistics, neuroscience, control, optimization, and operations research.

[Micro Autonomous Systems and Technology (MAST) (Dead link) (archive.org from 2015)](#)
Research encompassed by this project is aimed at understanding the fundamentals of design, mechanics, and autonomous control of groups of very small aerial and terrestrial robotic platforms.

[Medical Robotics at UC Berkeley](#)
Research in minimally invasive surgical robots, including laparoscopic manipulators, teleoperation, and teletaction.

[Networked Embedded Systems Technology (NEST) (Dead link) (archive.org from 2013)](#)
We are developing an Open Experimental software/hardware Platform for Network Embedded Systems Technology research that will accelerate the development of algorithms, services, and their composition into challenging applications dramatically.

Resources

- [FAQ about this website](#)
- [To Do List](#) *Admins only*