GRASP Laboratory

Kostas Daniilidis
Lab Director

Presented by Jim Keller
The GRASP lab focuses on interdisciplinary aspects of the science and technology of robotic and intelligent machines:

- sensing/ perception
- control/ planning
- locomotion/ manipulation
- human-robot interaction
Interdisciplinary Center

- 15 Faculty across CIS, ESE, MEAM departments

As of January 2013:
- 91 PhD Students
- 11 Postdocs
- 60 Master’s
- 10 Visitors and Staff

- >150 PhD graduates since 1979
- $12M in FY2011
Center Areas of Excellence

1. Multi-robot coordination and networked control (Kumar, Jadbabaie, Pappas, Ghrist, Michael)
2. Locomotion and Mobility (Koditschek, Kumar, Lee)
4. Perception (Shi, Taskar, Taylor, Daniilidis, Gallier, Mintz, Lee)
5. Haptic Perception (Kuchenbecker)
6. Reconfigurable robotics (Yim, Taylor)
7. Machine Learning (Taskar, Lee)
Awards & Accomplishments

• 2012: Quadrotor Research video receives millions of views.
• 2010: Penn team led by Dan Lee came 2nd in the MAGIC 2010 competition.
• 2010: Penn PR2GRASP team is among the 11 institutions to win a Willow Garage PR2 (led by Maxim Likhachev)
• 2010-2012: The UPennalizers team led by Dan Lee in the semi-finals or finals of RoboCup in the last 3 years
• 2007: Penn’s Little Ben 4th in the Urban Challenge
• Multiple Best Paper Awards and individual distinctions
Play Soccer!

Kid-sized Humanoid League
- First-place at Mexico City, 2012
- First place at Istanbul, 2011
- Semi-Finalist at Singapore, 2010

Standard Platform League
- Quarter-finalist at Mexico City, 2012
- Third place at US Open, 2012
- Quarter-finalist at Istanbul, 2011
- Runner up at US Open, 2011
- Quarter-finalist at Singapore, 2010
- Runner up at US Open, 2009
- Quarter-finalist at Osaka, 2005
- Runner up at US Open, 2005
- Fourth place at Lisbon, 2004
- Runner up at Padua, 2003
MAGIC2010 Competition: Autonomous Collaborative Exploration

Second Place Finisher
Being an insect!

Kod*lab
University of Pennsylvania

RHex Robot

Can go almost anywhere
let yourself together!

CKBot
Modular reconfigurable robot
University of Pennsylvania

Penn Engineering
Driverless Cars
General Quadrotors
Graduate Traineeships in Perception & Robotics

University of Pennsylvania • Philadelphia, PA

Penn

FACULTY:

TOM ASKAM
Networks & Computation

MATTHEW BARACSKAY
Biological Robotics

GABRIEL BERNSTEIN
Sensor Systems

PETER BOYER
Cognitive Neuroscience

SAMUEL BROWN
Signal Processing

MATTHEW CLARKE
Robotics

MARK COOPER
Cognitive Science

LINDA DOUGLAS
Speech Recognition

JASON FRANKS
Cognitive Neuroscience

EUGENIO FUENTES
Robotics

MARK GABRIEL
Brain-Computer Interfaces

RICK GRANT
Psychophysics

DAVID HARRISON
Neural Systems

BRAD HENNING
Robotics

JULIA HOFFMANN
Computational Auditory Scene Analysis

ANDREW KONICEK
Robotics

NATHAN KRAMER
Robotics

LINDA LEE
Computational Auditory Scene Analysis

TOM LINDWALL
Vision

ANN MARIE ROY
Robotics

JIM WOODARD
Robotics

MARC YANG
Speech Recognition

FOR MORE INFORMATION VISIT US AT
http://igert.perception.upenn.edu
Master’s in Robotics

the GRASP Laboratory since 2007

10 required classes (2 can be Thesis)

- 3 from core areas (Robotics, Perception, Control, AI)
- 5 Robotics relevant
- 2 Engineering electives (like Enterpreneurship)

Duration: 3-4 semesters

Substantial involvement in research

- 15 top faculty in robotics,
- 75 PhD students,
Educatong the roboticists of the very near future: K-12 Education!