

David C. Moore

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Objective:

Seeking a full-time position doing innovative work in the areas of computer vision, robotics, graphics, or image processing.

Availability:

Starting mid-September 2008.

Education:

- 2003-2008 **Massachusetts Institute of Technology** Cambridge, MA
M.S., 2005, Electrical Engineering and Computer Science
GPA: 5.0 (out of 5.0)
- 1999-2003 **California Institute of Technology** Pasadena, CA
B.S., 2003, Electrical Engineering
GPA: 4.1 (out of 4.0) GRE Scores: Quantitative, 800; Analytical, 800; Verbal, 630

Research Experience:

- 2003-2008 **Massachusetts Institute of Technology** Cambridge, MA
Supervisors: Prof. John Leonard, Prof. Seth Teller
Research Area: **The DARPA Urban Challenge**
Topic: Building a car that can drive itself in an urban environment. My contributions were computer vision-based lane finding, high-level route planning, and low-level software infrastructure.
- Supervisors: Prof. John Leonard, Prof. Daniela Rus, Prof. Seth Teller
Research Area: **Sensor Networks and Mobile Robotics**
Topic: Developed a distributed algorithm for localization of wireless sensor networks.
- 2002-2003 **California Institute of Technology** Pasadena, CA
Supervisors: Prof. Pietro Perona
Research Area: **Computer Vision**
Topic: Implementation of a real-time system for human detection and tracking based on a machine learning approach to characterizing human motion.
- Supervisors: Prof. Richard Murray
Research Area: **Control Systems/Networking**
Topic: Design of a robust networking toolkit for telemetry control and coordination of fan-propelled vehicles over a lossy wireless network. Also wrote a Bluetooth driver for the QNX real-time OS.

Professional Experience:

- Summer 2008 **Google** Mountain View, CA
I will be working as part of the book search group.
- Summer 2002 **NVIDIA Corporation** Santa Clara, CA
Developed an OpenGL driver intended for embedded systems under the VxWorks operating system. Applications include the aviation, military, and automotive industries.
- Summer 2001 **Evolution Robotics, Inc.** Pasadena, CA
Designed and implemented low-level hardware-control software for a mobile robot built on top of Linux. The robot is wirelessly linked via 802.11b wireless ethernet, and I designed the software API for low-level sensor and motor control.
- Summer 2000 **Institute for Defense Analysis, Center for Computing Sciences** Bowie, MD
Investigated the use of CPU virtualization on the Intel x86 architecture as a means of maintaining information security.

Teaching Experience:

- 2006 **Massachusetts Institute of Technology** Cambridge, MA
Teaching Assistant (TA) for course 6.142, Robotics: Science and Systems II, instructed by Profs. Teller and Rus.
- 2002-2003 **California Institute of Technology** Pasadena, CA
Teaching Assistant (TA) for course CS 134, Operating Systems and Compilers, instructed by Prof. Jason Hickey.

Honors and Awards:

- 2004 Best Paper Award, ACM Conference on Embedded Networked Sensor Systems (SenSys)
- 2003 National Science Foundation Graduate Research Fellowship
- 2002 Election to the Tau Beta Pi engineering honor society, Caltech chapter
- 2002 Caltech Upperclass Merit Scholarship: \$22,000 awarded by Caltech for senior year tuition
- 1999 Axline Merit Scholarship of \$10,000/year awarded by Caltech for all 4 years of study
- 1999 2nd Place Winner, Intel Science Talent Search, \$40,000 scholarship
- 1997 Eagle Scout

Publications:

- J. Leonard, et al. "A Perception Driven Autonomous Urban Vehicle." Journal of Field Robotics. Pending submission.
- A. Huang, D. Moore, M. Antone, E. Olson, S. Teller. "Multi-Sensor Lane Finding in Urban Road Networks." Proceedings of Robotics: Science and Systems. Zurich, Switzerland. June 2008.
- D. Moore, J. Leonard, D. Rus, S. Teller. "Robust Distributed Network Localization with Noisy Range Measurements." Proceedings of the Second ACM Conference on Embedded Networked Sensor Systems (SenSys '04). Baltimore, MD. November 3-5, 2004
- D. Moore, "A Real-World System for Human Motion Detection and Tracking," Undergraduate Thesis, May 2003.
- T. Chung, L. Cremean, W.B. Dunbar, Z. Jin, E. Klavins, D. Moore, A. Tiwari, D. van Gogh, S. Waydo, "A Platform for Cooperative and Coordinated Control of Multiple Vehicles: The Caltech Multi-Vehicle Wireless Testbed," Conference on Cooperative Control and Optimization, 2002.

Free Software Projects:

libiptcdata, a C library for manipulating IPTC metadata (e.g. captions, keywords) in digital photos.

My role: Lead developer

<http://libiptcdata.sourceforge.net>

libdc1394, a C library for capturing frames from Firewire (IEEE 1394) digital cameras.

My role: Developer

<http://damien.douxchamps.net/ieee1394/libdc1394/>

Lightweight Communications and Marshalling (LCM), a library for high bandwidth data exchange between multiple processes, intended for robotics applications.

My role: Developer

<http://lcm.googlecode.com/>

libcam, a C library and GUI for easy construction of video processing pipelines intended for computer vision applications.

My role: Lead developer

<http://libcam.googlecode.com/>

The Linux kernel, Firewire stack

My role: Contributor (improved support for isochronous streaming in recent kernel versions)

<http://www.linux1394.org/>