

# Marc Benjamin Zinck

5131 Penn Ave Pittsburgh PA, 15224  
marc.zinck@gmail.com (412) 818-5048

## Education

**Carnegie Mellon University** - Pittsburgh, PA  
**Bachelor of Science**  
**Computer Science** Major, **Film and Digital Imaging** Minor, **Physics** Minor.  
Graduated May 2002

## Course Work

Topics in Robotic Motion Planning\* (Graduate Level) *currently enrolled*  
Advanced Computer Graphics\* (Graduate Level)  
Computer Graphics I, II  
Computer Vision (Graduate Level)  
Sensor Based Robotic Motion Planning (Graduate Level)  
Mobile Robotics Programming  
Advanced Artificial Intelligence\* (Graduate Level)  
Artificial Neural Networks (Graduate Level)  
Operating Systems

\* Indicates Post Baccalaureate

## Technical Skills

C, C++, Cg, Matlab, Java,  
OpenGL, FLTK, Unix/Linux, Windows  
3D/2D Visualization, User Interface Design, GPGPU Programming  
Network & Socket Programming, Inter-Process Communication, Cross Platform Development,  
Realtime Systems, Multi-Thread & Multi-Process Software,  
Build System Design, Subversion, CVS, Make, Bugzilla

## Experience

**National Robotics Engineering Center: Carnegie Mellon University** - Pittsburgh, PA  
*Research Programmer September 2002 - Present*

- Algorithm development for accelerating visibility computations using graphics hardware.
- User Interface for Space robot mission level planner. Provided algorithm transparency for conducting field experiments and simulations.
- User Interface for heterogeneous robot teams. Aggregate information from multiple sources for operator command and control.
- 3D visualization for a Space robot path planner.
- Autonomous ground vehicle design and implementation.
- Systems architecture design and implementation for a multi-robot team.
- Sensor integration (hardware / low level software / high level logic).
- Remote multiple process management system.
- Build System design and development.
- Mapping software for autonomous helicopter.
- General robotic hardware and software maintenance.

**Lincoln Laboratory: Massachusetts Institute of Technology** - Lexington, MA  
*Summer Undergraduate Research Program Summer 2001*

- Laser and Sensor Applications Group.
- Researched and developed computer vision algorithms for automatic target recognition.

**Field Robotics Center: Carnegie Mellon University** - Pittsburgh, PA  
*Research Programmer/Intern May 2001*

- Cognitive Colonies: Robotics for Distributed Mapping of Urban Environments.
- Integrated gyroscopic navigation into a team of distributed robots.

*Research Programmer/Intern Summer 2000*

- Skyworker: Space construction Robot.
- Developed dynamics analysis tools for gait optimization.

*Research Programmer/Intern May 1999 - November 1999*

- Artisan: Software for building 3D models of a robot's workspace with minimal human interaction. Developed graphical user interface capabilities to assist the creation of 3D environments.
- Open Inventor graphics programming.

## Publications

**Robust Multirobot Coordination in Dynamic Environments**

*M.B. Dias, M.B. Zinck, R.M. Zlot, and A. Stentz*

IEEE International Conference on Robotics and Automation (ICRA), 2004

**A Versatile Implementation of the TraderBots Approach for Multirobot Coordination**

*M.B. Dias, R.M. Zlot, M.B. Zinck, J.P. Gonzalez, and A. Stentz,*

8th International Conference on Intelligent Autonomous Systems (IAS-8), March 2004

## Extra Curricular

Pittsburgh Ultimate Frisbee