

mike ornstein

mornstein@cmu.edu mikeornstein.com 609.418.3000
current: 5000 Forbes Ave. SMC 6555, Pittsburgh PA, 15289
permanent: 34 Elm St. Hopewell NJ, 08525

E D U C A T I O N **Carnegie Mellon University** May 2013
Bachelor of Science in Mechanical Engineering
Minor: Industrial Design
Carnegie Institute of Technology Dean's List, Spring 2011
Member Pi Tau Sigma, Mechanical Engineering Honors Society
Overall GPA: 3.77/4.00

E X P E R I E N C E **Near Earth Autonomy** Mechanical Engineer, May 2012 - Present
Developed industry leading sensor technology to outfit Naval helicopter fleet with fully autonomous capabilities
Conceived, designed, and prototyped economical waterproof 3D laser scanner for field robotics applications
Optimized airframe design for custom sensor head and computing payload, achieving 20% system mass reduction

Space Exploration Technologies Structures Intern, May 2011 - August 2011
Executed multibody dynamic simulations to determine design criteria of several mission critical rocket systems
Enabled use of LS-DYNA simulation package as viable design tool for 110 Structures Division employees
Performed analysis that is the basis of recovering first and second stage of \$50,000,000 launch vehicle

Micro Air Vehicle Laboratory: Robotics Institute Design Engineer, April 2011 - May 2011
Consulted on mechanical optimality and feasibility of custom aerial laser scanning package
Designed mass optimized, impermeable sensor enclosure for fused deposition modeling

Atkeson Laboratory: Robotics Institute Student Mechanical Designer, June 2010 - Present
Invented novel, safe, pneumatically actuated grasper, wrist, arm, and shoulder; patent pending
Designed control hardware and software for assistive tasks, implemented on physical prototype
Exhibited robot at 2011 Consumer Electronics Show in Las Vegas to demonstrate safe human interaction
Published paper and presented work at 2011 Engineering in Medicine and Biology Conference in Boston

P R O J E C T S **Formula SAE** Copresident, Fall 2009 - Present
Instituted wiki and data management precedents to ensure a self sustaining knowledge transfer to future members
Lead team comprised of industrial designers and engineers through construction of composite car body
Packaged kinematically optimal front and rear bell cranks, constrained by chassis, steering and suspension
Managed all financial aspects of the \$40,000 project, including sponsorships, budgeting, and purchasing

RobOrchestra: Vibraphone Robot Mechanism Designer, Fall 2010 - Spring 2011
Devised mechanisms to recirculate and distribute 5000 steel ball bearings for dispersal on vibraphone keys
Implemented novel planetary gear train utilizing water-jet gears and CNC machined components for robot

HyLo: Monkeybot and Stairbot Project Leader, Fall 2009 - Spring 2011
Constructed three-link planar robot to discover energy efficient trajectories for swinging on monkey bars
Built mechanical systems for a quadruped robot capable of quickly traversing rugged terrain

S K I L L S **Machine Tools**
Advanced Mill, Lathe
CNC Mill
Novice MIG Welding
Drill Press
Instron Material Testing

Software
Solidworks/PDM (CSWA)
LS-DYNA, LS-PrePost
HyperWorks Suite
Adobe Creative Suite
Microsoft Office

Environments
Matlab, Intermediate
JAVA, Intermediate
Unix OS, Novice
Windows OS, Expert
Mac OS, Expert

Other
Photography
Intramural Soccer
Rapid Prototyping
Pig Roast Planning
Private Pilot