

mike ornstein

ornstein.mike@gmail.com **mikeornstein.com**
address: 4141 Duquesne Ave, Unit 1, Culver City, CA 90232
cell: (609) 418-3000

E D U C A T I O N **Carnegie Mellon University** May 2013
Bachelor of Science in Mechanical Engineering
Overall GPA: 3.77/4.00

E X P E R I E N C E **Space Exploration Technologies** Design Criteria Engineer, July 2015 - Present
Built teams and tools to ensure design criteria from Loads, GNC, Propulsion, etc. is in a closed loop with hardware owners
Ran design review and qualification criteria check-ups that mitigate over 100 mission critical issues per program year
Led team to implement automated load prediction to key hardware capability cross checks for 100+ parts for day of launch
Integrated design criteria guidance into composite design tools, combined load tubing stress calculators, and other tools
Architected and led implementation of company-wide Bill of Design web tool to manage hardware design and qualification

Space Exploration Technologies Structures Engineer, Summer 2011, July 2013 - July 2015
Built and managed 1M DOF Dragon stress and loads model, established collaboration best practices for 10+ contributors
Owned and revamped spacecraft mass performance process, trained and transferred responsibility to new engineers
Executed multi-body dynamic simulations to determine design criteria of several mission critical rocket systems
Enabled use of LS-DYNA simulation package as viable design and analysis tool for 110 members of the Structures team

Near Earth Autonomy Mechanical Engineer, May 2012 - July 2013
Developed industry leading sensor technology to outfit naval helicopter fleet with fully autonomous capabilities
Conceived, designed, and prototyped economical IP67 rated 3D laser scanner for field robotics applications
Optimized airframe design for custom sensor head and computing payload, achieving 20% system mass reduction

Carnegie Mellon Robotics Institute Atkeson Lab Engineer, June 2010 - May 2011
Invented and fabricated 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 Las Vegas Consumer Electronics Show and published in IEEE Engineering in Medicine and Biology

P R O J E C T S **Formula SAE** Co-President, Fall 2009 - Spring 2013
Instituted wiki and data management precedents to ensure a self sustaining knowledge transfer to future members
Led 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
FEMAP, NASTRAN

Environments
Matlab, Intermediate
JAVA, Intermediate
Visual Basic, Intermediate
Python, Novice
SQL, Intermediate

Other
Photography
Intramural Soccer
Rapid Prototyping
Pig Roast Planning
Private Pilot