

Alexander N. Alspach

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EDUCATION:

Drexel University
Bachelor & Master of Science in Mechanical Engineering
Focus: Autonomous Systems and Control

Philadelphia, PA
Graduated - June 2012
GPA: 3.91 / 4.0



HONORS:

Milton Rosenberg Scholarship for Academic Excellence in Engineering
A. J. Drexel Scholarship, Drexel University
Dean's List, Drexel University

2010
2007 - 2012
2007 - 2012



EXPERIENCE:

KAIST Humanoid Robotics Lab
Humanoid Robotics Researcher

Daejeon, South Korea
September 2010 - March 2011

- Studied the manufacture and assembly process of Korea's most advanced humanoid robot platform, HUBO2
- Designed website for multi-university collaboration and sharing of HUBO related research and tools
- Composed comprehensive assembly and setup manual to accompany HUBOs exported from KAIST to U.S. universities
- Learned troubleshooting, maintenance and repair methods as part of U.S. team of HUBO specialists
- Contributed to international awareness, engagement and collaboration in the field of robotics

DASL Summer Internship Program
Instructor of Computer Aided Manufacturing

Philadelphia, PA
June 2010 - September 2010

- Created curriculum, lectures, homework and tests to maximize material taught over ten week course
- Covered tools and usage, G-code, AutoCAD Pre-CAM techniques, MasterCAM X3 and hands-on CNC manufacturing
- Mentored student teams in the design and manufacturing stages of a pitch-roll-yaw (3DOF) mechanism

Synthes, Inc.
Product Development Engineering Intern

West Chester, PA
September 2009 - March 2010

- Designed and Supervised mechanical tests and design validation of products for FDA approval
- Designed mechanical tests fixtures and produced engineering drawings for in house manufacturing
- Used Pro/Engineer to produce spinal implant and instrument concepts for presentation, review, failure analysis and prototyping

Max Levy Autograph, Inc.
Research and Design Engineering Intern

Philadelphia, PA
September 2008 - March 2009

- Designed processes and methodologies for depositing thin film resistors and circuits onto flexible substrates
- Conducted multivariate experiments; collected and analyzed data to refine manufacturing processes and optimize final products
- Designed tooling for mechanical devices and fixtures and created technical drawings for manufacturing
- Assisted in design, maintenance, installation and repair of facility systems and machinery

Northern Data Systems, Inc.
Technician

Levittown, PA
September 2004 - Present

- Collaborate with President to ensure customer satisfaction, product reliability, and efficient resolution of issues
- Build, repair and supervise the production of telemetry systems
- Manage shipping and receiving



PUBLICATION:

Ellenberg, R., Sherbert, R., Oh, P.Y., Alspach, A., Gross, R., "Towards a Common Interface for Humanoid Simulation and Hardware", Proc. IEEE-RAS Int. Conf. Humanoid Robotics, Nashville, TN, Dec. 2010 (accepted for publication).



PRESENTATION:

"Humanoid Robot (HUBO) Collaborative Documentation", Alspach, A., Gross, R., Presentation for the NSF PIRE Advisory Committee, Drexel University, Philadelphia, PA, Aug. 2011

"Miniature Humanoid Manipulation", Alspach, A., Mason, S., Nguyen, D., Presentation for the NSF PIRE Advisory Committee, Drexel University, Philadelphia, PA, Aug. 2011

"Humanoid Robot Collaborative Documentation and Experience in Korea", Alspach, A., Gross, R., Presentation for Drexel University Provost, Drexel University, Philadelphia, PA, Aug. 2011

"STEM and Humanoid Robots", Alspach, A., Mason, S., Presentation at Homaesil Middle School, Suwon, South Korea, Feb. 2011

"Dynamic Mobile Robot", Choi, D., Alspach, A., Lim, J., Jeong, T., Mason, S., Presentation at Korea Institute of Science and Technology Gangneung, Gangwon, South Korea, Feb. 2011

"HUBO2 Humanoid Robot", Alspach, A., Mason, S., Presentation for STEM Outreach, HUBO Lab, KAIST, Daejeon, South Korea, Jan. 2011

"HUBO2 Humanoid Robot", Alspach, A., Mason, S., Presentation for President of KAIST and family, HUBO Lab, KAIST, Daejeon, South Korea, Jan. 2011

"Miniature Humanoid Path Planning", Alspach, A., Mason, S., Ellenberg, R., Jun, Y., Presentation at Assn. for the Advancement of Artificial Intelligence, Atlanta, GA, Jul. 2010.



ACTIVITIES:

Drexel Autonomous Systems Lab
Drexel University, Philadelphia, PA

May 2009 - Present

Indoor Aerial Robot Competition
Drexel University, Philadelphia, PA

March - May 2009

American Society of Mechanical Engineers

2008 - Present