Andrew H. Hoskins

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Objective:

To secure a full-time position designing, developing and/or modeling innovative mechanical systems or devices.

Education:

Pennsylvania State University, University Park, Pennsylvania

Doctor of Philosophy, Mechanical Engineering; Requirements satisfied by December 2005

GPA – 3.75/4.00

Thesis Research: Dynamic Cadaveric Lower Extremity Simulations of Locomotion – Robotics Development and Related Studies

Master of Science, Mechanical Engineering; 2002

GPA – 3.72/4.00

Thesis: *Development and Validation of the Pennsylvania Truck Driving Simulator,* (2002)

University of Rochester, Rochester, New York

Bachelor of Arts, Physics; Mechanical Engineering Minor; 1999

GPA - 3.30/4.00

Key Courses:

Simulation of Mechanical Systems, Microprocessor Interfacing, Hybrid Electric Vehicle Laboratory, Advanced Machine Dynamics, Mechanics of Human Locomotion, Modeling Mechanical Systems, Advanced Mechanics of Materials, Automatic Control Systems, Statistics, Skeletal Physiology

Skills:

Computing: (Software – Activities performed)

Lab Windows/CVI (National Instruments) – Graphical user interface development, Data acquisition and processing, Motion control

C – Program revision and development

MatLab – Data processing, File handling, Kinematics analysis, Signal processing, Animation

Simulink – System modeling and controller development for coursework

Image Pro (Image analysis) – Data acquisition

VDANL (Vehicle simulation) – Light and heavy vehicle simulation

SCANNER2 (Pennsylvania Truck Driving Simulator) – Scenario development

DADS (Dynamic Analysis and Design System) – Vehicle simulation

Minitab – Statistical analysis

SPSS – Statistical analysis

Motion Analysis – 3-D photogrammetry data collection and analysis

Microsoft Office Suite – (Excel, Word, PowerPoint) Word processing, Data processing, Presentation development and delivery

CAD Standard – Created drawings of original machine components to guide fabrication

Machining: 3-axis manual mill (Bridgeport), 3-axis CNC (HAAS), TIG Welding, Manual lathe

Work Experience:

Pennsylvania State University, University Park, PA

Biomechanics Laboratory,

Research Assistant, 6/02 – present: Developed and redesigned machine elements, electronics, and data processing and control software for the Robotic Dynamic Activity Simulator, a device used in studies of human foot and ankle function during locomotion; Conducted 3-dimensional kinematics analysis of the human lower extremity during locomotion; Supported all procedures associated with cadaver experimentation including dissection and machine specimen interfacing; Tested animal specimens with orthopedic interventions using standard materials testing equipment, analyzed data and wrote comprehensive reports detailing the results

Pennsylvania Transportation Institute,

Research Assistant, 1/02 – 6/02: Examined dynamic axle loads of coach buses using DADS; Modified existing truck models within DADS to simulate coach buses and tractor semi-trailers; Summarized results into graphs and text for final report

Research Assistant, 12/00 – 1/02: Technical advisor on simulator training program with Pennsylvania Department of Transportation (PENNDOT); Maintained and upgraded truck driving simulator while developing driving scenarios for use in training program

Mechanical Engineering Dept.,

Teaching Assistant, 8/00 – 5/01 (Design of Machine Elements; Vehicle Dynamics): Helped undergraduate engineering students understand course material; Graded homework problems and exams

Vance & Renz, LLC, State College, PA

Consultant, 7/03 – 6/04: Provided expertise while conducting investigations into vehicle accidents involving PENNDOT vehicles and equipment; Collected and analyzed data to identify ways of mitigating these accidents; Summarized findings and supporting information into graphs, tables and text for presentations and final report; Presented technical information to PENNDOT employees at meetings held throughout the project

Eastman Kodak Company, Rochester, NY

Department of Office Imaging,

Research Assistant, 6/98 – 1/99: Performed experiments to investigate the physics of the electro-photographic process; Collected and analyzed data; Created comprehensive reports on analyzed data

University of Rochester, Rochester, NY

Office of Residential Life,

Resident Advisor, 8/96 – 5/98: Counseled and advised 31 residents ranging from freshmen to seniors; Developed sense of community among hall members through programming and activities; Maintained order and upheld University policy

Abstracts:

Andrew Hoskins, Andrew Hamel, Andrew Fauth, Neil Sharkey. "Dynamic Gait Simulation: Steps into the Future." American Society of Biomechanics Annual Meeting, September 8-11, Portland, Oregon, 2004.

Andrew Hoskins, Moustafa El-Gindy, Robert Vance, Nathan Hiller, Charles C. Goodhart. "Truck Driving Simulator Effectiveness." Winter Annual Meeting, Symposium on "Advances in Vehicle Technologies," November 14-19, New Orleans, Louisiana, 2002.

Technical Reports:

Robert Vance, Michael Renz, Moustafa El-Gindy, Andrew Hoskins and Nathan Hiller, "Mitigating PENNDOT Equipment Accidents." Final Report. Vance & Renz, LLC, July 2004.

Bohdan Kulakowski, Moustafa El-Gindy, Andrew Hoskins and Seokyoung Chae, "Transit Bus and Motor Coach Axle Weight Study." Final Report, No. PTI-2003-01, Pennsylvania Transportation Institute, The Penn State University, sponsored by PENNDOT, July 2002.

R.J. Vance, M. El-Gindy, A.H. Hoskins, and N.J. Hiller, "Simulator Training Evaluation Program." Final Report, No. PTI-2002-06, Pennsylvania Transportation Institute, The Penn State University, sponsored by PENNDOT, May 2002.

Activities:

Varsity Track and Field (U of Rochester - 4yrs), Co-Captain (2yrs); 35lb weight, discus, hammer throw: 1997 through 1999 University Athletic Association Discus Champion

Future-Truck Competition (2001)

Society Memberships:

American Society of Mechanical Engineers (ASME)
Society of Automotive Engineers (SAE)
American Society of Biomechanics (ASB)