

Craig M. Goehler

850 North State Street, Apt. 9K, Chicago, IL 60610

E-mail: cgoehler@alumni.nd.edu

Website: <http://www.nd.edu/~cgoehler/>

Cell: (847) 207-0134

Job Objective

Highly motivated, innovative individual looking for a career in mechanism or robot design, kinematic analysis, dynamic simulation or other related mechanical engineering research positions.

Summary of Skills

- Advanced analysis and design of robotics and mechanisms: Denavit and Hartenberg parameters, Instantaneous Invariants/Curvature Theory, Screw Theory, analytical dynamics
- Computational software: proficient in Matlab and Mathematica; knowledgeable in ProEngineer/Wildfire and C/C++

Education

PhD M.E. August, 2007 - University of Notre Dame, Advisor: Dr. Michael M. Stanisic, Dissertation: *Design of a Humanoid Shoulder-Elbow Complex*

M.S.M.E. 2004 - University of Notre Dame, Advisor: Dr. Michael M. Stanisic, Thesis: *A Generalized Parameterization of T1Motion and its Application to the Synthesis of Planar Mechanisms*

B.S.M.E. 2002 - University of Notre Dame

Honors

8/02-5/07 AME Departmental Fellowship, Notre Dame

4/04 Kaneb Outstanding Graduate Student Teacher Award, Notre Dame

5/03 Space Grant Fellowship, Indiana Space Grant Consortium

Professional Experience

Summer 2002 Robotics Eng./Intern IMI Cornelius Inc., Glendale Heights, IL

- Designed a robotic arm and produced CAD drawings of various parts for McDonald's Autofry Project (autonomous french fry dispenser)

Teaching Experience

Fall 2002-Spring 2007 Teaching Assistant AME Dept., Notre Dame, IN

- Mechanics II (Dynamics), Thermodynamics, Kinematics and Dynamics of Machinery, Mechanisms and Machines, Introduction to Robotics, ME Senior Design, Dextrous Manipulators, Computing in AME

Fall 2000-Spring 2002 Undergraduate T.A./grader AME Dept., Notre Dame, IN
• CAD/CAM Laboratory, Kinematics and Dynamics of Machinery, Introduction to Robotics

Technical Skills

- Analyzed both planar and spatial mechanisms/robots using Denavit and Hartenberg parameters, Screw Theory and analytical dynamics
- Designed four-bar linkages using instantaneous invariants, Burmester Theory, Curvature Theory and Freudenstein's equation
- Analyzed and modeled the joints and bones of the human body using basic kinematic principles
- Modeled mechanisms and robots and produced animations using ProEngineer, ProE/Wildfire and OpenGL
- Coded countless programs, numerical simulations and graphical animations using Matlab and Mathematica
- Programmed codes for path-planning, vision guidance and neural networks for robots using C and C++
- Produced professional documents and presentations using LaTeX and created figures using IslandDraw and Xfig

Journal Publications

Stanisic, M.M., Goehler, C.M., and Tomsic, M., 2007, "A Quantified Description of the Coupling between the Reaching Direction and Elbow Axis Direction", *Applied Bionics and Biomechanics*, Vol. 4, No. 2, pp.47-55.

Stanisic, M.M., and Goehler, C.M., 2007, "Singular Planes of Serial Wrist-Partitioned Manipulators and Their Singularity Metrics", *Mechanism and Machine Theory*, Vol. 42, No. 8, pp. 889-902.

Goehler, C.M., Stanisic, M.M. and Perez, V.M., 2004, "A Generalization of T1 Motion Applied to the Synthesis of Planar Mechanisms", *Mechanism and Machine Theory*, Vol. 39, No. 11, pp. 1223-1244.

Conference/Symposium Papers

Goehler, C.M. and Stanisic, M.M., 2004, "Singular Planes of the Articulated Arm-Subassembly", 9th Intl. Meeting of *Advances in Robot Kinematics*, ed. J. Lenarcic and C. Galleti, Kluwer Academic Publishers, Genoa, July, pp. 275-282.

Community Service

1997-1998 Toys for Tots, Fremd High School, IL
1992-1998 Various service activities through Boy Scouts of America (Eagle Scout)