

Neil B. Petroff

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Education

UNIVERSITY OF NOTRE DAME Notre Dame, IN

- Ph.D. in Mechanical Engineering, October 2006.
- Dissertation: Biomimetic Sensing for Robotic Manipulation.

UNIVERSITY OF FLORIDA Gainesville, FL

- M.S. in Mechanical Engineering, December 1998.
- Thesis: A Fuzzy-controlled Hand Orthosis for Restoring Tip Pinch, Lateral Pinch, and Cylindrical Prehensions to Patients with Elbow Flexion Intact.

ROSE-HULMAN INSTITUTE OF TECHNOLOGY Terre Haute, IN

- B.S. in Mechanical Engineering, *cum laude*, May 1990.

Experience

UNIVERSITY OF NOTRE DAME, Teaching Assistant January 1999 – August 2005

- Supported various courses in the AME curriculum. Led laboratory sessions, maintained attendance and grade records, certified students on machine tool equipment, and coordinated 5 teaching assistants.
- Conceived, edited, and produced a QuickTime video summarizing the design accomplishments of the Senior Design class for the Fall 2000 semester.

UNIVERSITY OF FLORIDA, Teaching Assistant August 1996 – December 1998

- Taught Instrumentation and Measurements Laboratory, August 1996 – May 1997.
- Taught Mechanical Engineering Controls Laboratory from August 1997 – December 1998, maintained manual used for class, and designed laboratory experiments.

BETHLEHEM STEEL CORPORATION, Engineer June 1989 – June 1996

- Aided in implementing an argon-purging tundish system resulting in an estimated annual savings of \$1 million.
- Aided in developing SOPs to reduce incidence of transition breakouts.
- Led team to modify systems to detect the formation of sticker breakouts.
- Worked as Summer Engineer, June – August 1989.

Journal Publication

- “Fuzzy Control of a Hand Orthosis for Restoring Tip Pinch, Lateral Pinch and Cylindrical Prehensions to Patients with Elbow Flexion Intact,” by Neil Petroff,

Paul Mason, and Kim Reisinger. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, June 2001.

Conference Papers

- “A Hand Model for the Development and Validation of a Fuzzy Controlled Orthosis,” by Neil Petroff, Paul Mason, and Kim Reisinger. *Proceedings of the International Mechanical Engineering Congress & Exposition*, Nov. 15–20, 1998, Anaheim, California.
- “Numerical Stability Analysis of a Fuzzy Controller,” by Neil Petroff, Kevin Walchko, Paul Mason, and Kim Reisinger. *Intelligent Engineering Systems Through Artificial Neural Networks, Vol. 8. Proceedings of the Artificial Neural Networks in Engineering (ANNIE '98) Conference*, Nov. 1–4, 1998, St. Louis, Missouri.
- “Development of a Generic Hybrid Fuzzy Controller,” by Kevin Walchko, Neil Petroff, Paul Mason, and Norman Fitz-Coy. *Intelligent Engineering Systems Through Artificial Neural Networks, Vol. 8. Proceedings of the Artificial Neural Networks in Engineering (ANNIE '98) Conference*, Nov. 1–4, 1998, St. Louis, Missouri.

Achievements

- Semifinalist, 2004-2005 McCloskey Notre Dame Business Plan Competition for Mercury Orthotics.
- Kaneb Outstanding Graduate Teaching Assistant Award, 2004
- Co-chair, 2002 Aerospace and Mechanical Engineering Graduate Student Conference.
- Aerospace and Mechanical Engineering Graduate Student Conference, Best speaker award runner-up, 2000 and 2001.
- Theoretical developments in techniques award for “Numerical Stability Analysis of a Fuzzy Controller,” ANNIE '98.

References

Dr. J. William Goodwine (Ph. D. Advisor), Associate Professor, Aerospace & Mechanical Engineering Department, University of Notre Dame
574-631-3283, jgoodwin@nd.edu

Dr. Stephen M. Batill, Professor and Chair, Aerospace & Mechanical Engineering Department, University of Notre Dame
574-631-5433, batill@nd.edu

Dr. Paul A. C. Mason (M.S. Advisor)
National Aeronautics and Space Administration, Goddard Space Flight Center
301-286-2360, Paul.A.Mason@nasa.gov