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Ivan J. Baiges-Valentin, Ph.D., P.E.

Education

December 1995, Doctor of Philosophy in Mechanical Engineering
University of Florida
Specialty Areas: Robotics, Dynamics and Controls
Thesis Title: "Dynamic Modeling of Parallel Manipulators"

August 1989, Master of Science in Mechanical Engineering
Massachusetts Institute of Technology
Specialty Areas: Design, Controls and Rehabilitation Engineering
Thesis Title: *"Development of a Whole-Arm Orthosis for Abnormal Tremor Suppression."* Awarded U. S. Patent # 5231998 for design developed as part of the Master Thesis.

June 1986, Bachelor of Science in Mechanical Engineering
University of Puerto Rico at Mayagüez
Minor in Electrical Engineering in the area of Microprocessors and Digital Design

Professional Experience

August 2004 - University of Puerto Rico at Mayagüez
Associate Professor in the Department of General Engineering. Responsible for teaching courses in the area of Basic Material Sciences, developing new courses in Plastics and Material Science. Responsible for conducting research in the area of Design and Manufacturing of Plastic Products; and Design of Environmentally-friendly products.

January 2005 to January 2006 - Caribbean Integration Engineers
Technical consultant in training services in Process Control and Automation; R&D and Mechanical Automation; and emerging areas such as Process Control with Process Analytical Technologies and RFID.

January 2001 to September 2004 - Hewlett-Packard del Caribe Ltd, Aguadilla Puerto Rico.
Member of Technical Staff, part of Imaging and Printers Supplies Organization – Americas R&D Team of Puerto Rico. Member of the Modeling Center, responsible for Finite Element Analysis of Plastic Parts and related Manufacturing Processes (such as Ultrasonic Welding). Also responsible of the Mechanical Design of Plastic Products, and Design for Manufacturing for New Product Development in the area of Inkjet Printers.

November 1999 to Present - Engineering Consulting Services
Professional Development Services for industry teaching courses such as *Analysis and Design of Automatic Controls* which was offered at Abbott PR; *Fundamentals of Engineering Plastics* for Stryker; *Design for Manufacturing and Assembly* for Guidant & Medtronic, PE Examination Review courses in the areas of Automatic Controls and Machine Design. Presently working with Stryker in product redesign for increasing automation effectiveness.

May 1996 to Present – Expert Witness Services.
Expert witness in the area of product liability. This is in addition to having taught the Product Design Course at UPR Mayaguez where the topics of product safety and how to design safe products were covered.

January 1996 to December 2000 - University of Puerto Rico at Mayagüez
Assistant Professor in the Department of Mechanical Engineering. Taught courses in Automatic Control Systems, Machine Design, Product Design, and Engineering Design. Conducted research in the Design of Environmentally-friendly products, and in Polymeric Materials.

June 1998 to December 2001 - University of Puerto Rico at Mayagüez
Assistant Professor in the MIT UPR Tren Urbano Professional Development Program – This program was created to develop engineering professionals capable of building and operating a mass transit system such as the Tren Urbano. Supervised 5 students developing train maintenance strategies and equipment.

August 1993 to December 1995 - University of Florida, Gainesville, Florida
Research Assistant in the Center for Intelligent Machines and Robotics, Department of Mechanical Engineering. Developed and programmed dynamic simulation algorithms for parallel manipulators.

August 1989 to July 1993 - University of Puerto Rico at Mayagüez
Instructor in the Department of Mechanical Engineering. Taught courses in Kinematic Design, Machine Design, Design of Microprocessor-Based Systems, Automatic Controls, Manufacturing Processes Laboratory and Product Design.

Publications

" Development of a Whole Arm Orthosis for Tremor Suppression", In Proceedings of the 12th Annual RESNA Conference, pages 290 - 91, New Orleans, LA, June 1989.

"The Development of a Whole Arm Orthosis for Abnormal Intentional Tremor Suppression" Mass. Inst. of Technology, M.S.M.E. Thesis, August 1989.

Aisen, ML; Arnold, A; Baiges, I ; Rosen, M . "The Effect of Mechanical Damping Loads on Disabling Action Tremor". Neurology , (1993), 43(7)

"Design of a controlled-energy-dissipation orthosis (CEDO) for the functional suppression of intention tremors", In The Journal of Rehabilitation Research and Development, Vol. 32 No. 1, February 1995 Pages 1-16.

"Dynamic Modeling of Parallel Manipulators," University of Florida, Ph.D. Thesis, December 1995.

15 patent submissions and defensive publications while at Hewlett Packard Puerto Rico (titles are confidential at the moment)