

Leandro G. Barajas, Ph.D.

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WORK EXPERIENCE

- 2003 - Present **General Motors**, GM R&D Center, Manufacturing Systems Research (MSR) Laboratory, Plant Floor Systems & Controls, **Senior Research Engineer**
- 1999 - 2003 **Georgia Institute of Technology**, Manufacturing Research Center (MARC), Center for Board Assembly Research (CBAR), **Graduate Research Assistant**
- 2001 Summer **Siemens Dematic Electronics Assembly Systems**, Software Development Department, **Software Developer**
- 1996 - 1999 **Occidental Petroleum Inc.**, Telecommunications & SCADA Department, **R&D Engineer**

EDUCATION

- 1999- 2003 **Georgia Institute of Technology**, Atlanta, GA, **Ph.D., M.S. in Electrical & Computer Eng.**
- 1991-1996 **Universidad Distrital Francisco José de Caldas**, Bogotá, Colombia, **B.S. in Electrical Eng.**
- 1990-1991 **Military Service**, Army Infantry, Presidential Honor Guard, **Reserve Lieutenant**
- Languages **Fluent English and Spanish**, basic German and French

SELECTED PUBLICATIONS († First Author)

- 2007 † **Stencil Printing Process Modeling and Control Using Statistical Neural Networks.**
To appear in IEEE Transactions on Electronics Packaging Manufacturing, 2007
- 2005 **Finite State Markov Model Based Knowledge Discovery.** Artificial Neural Networks, Fuzzy Logic, Swarm Intel. & Evolutionary Comput. Conference (ANNIE05), St. Louis, MO
- 2003 † **Process Control in a High-Noise Environment Using a Limited Number of Measurements.** American Control Conference, Denver, CO
- 2003 † **Modeling and Control of SMT Manufacturing Lines Using Hybrid Dynamic Systems.** Book Chapter in *Hybrid Syst.: Comput. & Control*, Springer-Verlag, Prague, Czech Republic
- 2003 † **Process Control in High-Noise Environments Using a Limited Number of Measurements. Ph.D. Dissertation (Patent App. 20040244613)**, M. Egerstedt and E.W. Kamen (Advisors), *School of Electrical & Computer Engineering*, Georgia Institute of Technology, Atlanta, GA
- 2002 † **A Closed-Loop Control Algorithm for Stencil Printing.** Surface Mount Technology Association (SMTA) International Conference, Boston, Jun 2002
- 1998 † **Neural-Fuzzy Embedded Control System.** B.S. Electrical Engineering Thesis (Honored), Universidad Distrital F.J.C., Bogotá, Colombia

INTELLECTUAL PROPERTY RECORD († First Author)

Authored over 30 Records of Invention (ROI) that in turn have been translated into over **17 Patents & Patent Applications, 5 Defensive Publications, and 5 GM Internal Tool & Method Inventions** (Trade Secrets). Selected inventions include († First Author):

- 2006 † System & Method for Selection of Prediction Tools
- 2005 † Finite-State Markov-Model Based Fault Code Prediction
- 2005 System & Method for Production System Performance Prediction
- 2005 † System & Method for Temporal Data Mining
- 2004 † System & Methods for Data-Driven Control of Manufacturing Processes

HONORS & PROFESSIONAL ACTIVITIES

- 2007 **Society of Manufacturing Engineers Kuo K. Wang Outstanding Young Manufacturing Engineer Award** for exceptional contributions and accomplishments in the mfg. industry
- 2006 **2 GM “Boss” Kettering Awards, Chairman’s Honors Award, R&D Charles L. McCuen Innovation Award, and R&D Center People’s Choice Award for “Most Creative”**
- 2006 **Elected IEEE Senior Member**
- 2005 **General Motors R&D “Spark Plug” Award** for work with global R&D collaborators
- 2003, 2000 **Georgia Institute of Technology Ph.D./M.S. OMED Tech Tower Awards**
- Associations **IEEE, SME, Sigma Xi, SMTA, SHPE and ACM/SIGKDD**