

Peter I. Chang

Mechanical Engineering
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Summary

Engineering scientist currently focused on advanced control systems, having hands-on experience designing and conducting experiments, deriving mathematical models, modifying mechanical design and programming for embedded systems. Knowledge in modern control engineering and proficient with MATLAB/Simulink programming, simulation and analysis, as well as technical writing and strong communication skills.

Specialties

Control systems, geometric linear systems, high level feedback control, system identification and mathematical modeling, filtering and statistical analysis. Programming for Digital Signal Processor using C/C++ and Windows programming.

Education

- . Ph.D. Candidate, Mechanical Engineering, Boston University, USA. Expected to graduate: Dec 2011.
 - . M.A., Engineering Science and Ocean Engineering, National Taiwan University, Taiwan, 2003.
 - . B.S., Engineering Science and Ocean Engineering, National Taiwan University, Taiwan, 1998.
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Professional Experience

Graduate Research Assistant at Boston University, USA. Sep 2007 ~ current

- . Focused on a novel local raster scanning method for Atomic Force Microscopes (AFM)
- . Demonstrated improvements by reducing scan time up to two orders of magnitude
- . Developed a statistical theoretical framework for performance analysis on local raster scanning
- . Design of signal detection and pattern evolution in local raster scanning
- . Using an Digital Signal Processor (DSP) system and conduct nano-positioning experiments

Graduate Teaching Assistant at Boston University, USA. Sep 2005 ~ Aug 2007

- . Teaching assistant for Mechanics, Material Science and Heat Transfer
- . Conducted laboratory classes, led discussion groups and provided other administrative help

Staff Research Assistant at NTU's Hydrotech Research Institute, Taiwan. Feb 2004 ~ Aug 2005

- . Analyzed hydrodynamic systems with field data and CFD simulation for flood forecasting
- . Ran in-house simulation code from data perpetration to post result analysis

Thermal Engineer at Delta Electronics Inc., Taiwan. July 2003 ~ Jan 2004

- . Analyzed thermal cooling systems in product development cycle
 - . Collaboration with mechanical and electrical team for heat transfer cooling design
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Technical skills

- . Computer languages: **MatLab/Simulink, C/C++, Fortran**
 - . Embedded system: **Digital Signal Processor**
 - . Engineering software: **FloTHERM, Pro/E**
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Honors

- . Best presentation in session program (nano-positioning), American Control Conference 2009
 - . Honorable mention in BU Research Symposium (Poster): Center of Information and System Engineering (CISE) 2009
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Professional memberships

- . Student member of IEEE and IEEE/Control System Society since 2008
 - . Student member of ASME since 2009
 - . Student member at Center of Information and System Engineering at Boston University since 2007
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Publication

- . **journal paper** in Review of Scientific Instruments (11')
 - . **conference papers** in American Control Conference (08', 09') and in Conference on Decision and Control (09', 11')
 - . **book chapter** in "Control Technologies for Emerging Micro and Nanoscale Systems", Springer (11')
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Others

- . Native **Mandarin Chinese, Taiwanese** speaker