

Aravind Alwan

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Objective

An opportunity to tackle design challenges in the industry through research in computational modeling and reliability analysis

Education

Ph.D. in Mechanical Engineering, University of Illinois at Urbana-Champaign **Aug 2013 (Expected)**

Dissertation: Uncertainty quantification in microsystems

M.S. in Mechanical Engineering, University of Illinois at Urbana-Champaign **May 2011**

Thesis: Analysis of hybrid electrothermomechanical microactuators with integrated electrothermal and electrostatic actuation

B.Tech. in Engineering Physics, Indian Institute of Technology Delhi **May 2005**

Thesis: Modeling and simulation of photonic crystals

Academic Honors

- Computational Science and Engineering fellowship, 2009.
- Bronze medal in the 3rd National Science Olympiad, 2001 from the Science Olympiad Foundation of India.
- National Talent Search Examination scholarship, 1999.
- Prof. C. S. Venkataraman Memorial award for 1st place in Regional Mathematics Olympiad, 1999.

Research Experience

Research Assistant, Computational Multiscale Nanosystems group, UIUC **August 2006 - present**

- Developing a computational framework for modeling microsystems with a focus on incorporating uncertainty quantification to generate reliable predictions of performance in the presence of variations due to process and environmental uncertainties.
- M.S. thesis work involved modeling hybrid microactuators that integrate electrostatic and electrothermal actuation.

Process Engineer, Sensfab Pte. Ltd., Singapore **Jan 2006 – August 2006**

- Modeling and reliability analysis of a MEMS microphone. Designed a procedure for testing the reliability of the device after subjecting it to extreme weather conditions and physical abuse. Developed a mathematical model of the microphone to predict device performance based on varying design parameters.

Project Assistant, Indian Institute of Science, Bangalore, India **May 2005 – Jan 2006**

- Developed a topology optimization framework for the automatic generation of microsystem designs that adhere to specific micromachining constraints. Applied topology optimization to aid the design of electrostatic microactuators.

Skills

FEA (COMSOL, Ansys and Pro/Engineer), Programming (Python, C++, MATLAB, Java), MEMS cleanroom experience.

Service and Leadership

- Chapter co-ordinator and projects co-ordinator of Asha for Education, a charity that supports education in India.
- Paper reviewer for the Journal of Microelectromechanical Systems.
- Completed the 2008 Chicago marathon and the 2007 CDC half-marathon to raise awareness and donations for Team Asha.