

James (Hyung Suk) Yang

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OBJECTIVE: Microsystems related R&D or consulting internship position.

EDUCATION:

Georgia Institute of Technology, Atlanta, GA

Ph.D. in Electrical and Computer Engineering

Jan. 2009 – Dec. 2012 (expected)

- Thesis Topic: Interconnect Technologies for Integrating CMOS and MEMS
- Advisors: Dr. James D. Meindl and Dr. Muhannad S. Bakir
- Qualifier examination passed

M.S. in Electrical and Computer Engineering (GPA: 3.70/4.00)

Aug. 2007 – Dec. 2008

- Certificate in Microsystems Packaging from PRC
- Minor in Management

B.S. in Computer Engineering w/ High Honor (GPA: 3.42/4.00)

May 2003 – Aug. 2007

- Specialization: Microsystems and Computer Engineering

EXPERIENCE:

GigaScale Integration (GSI) Group, Graduate Research Assistant

Jan. 2008 – Present Advisors: Dr. James Meindl and Dr. Muhannad Bakir

Developed processes for microfluidic cooling, compliant interconnects and TSVs

Developed assembly process for 3D integrated systems and compliant interconnects

Performed mechanical/electrical modeling, testing and characterizations

Equipment trainer for STS ICP (DRIE)

ResNET, Residential Technology Advisor II

Aug. 2005 – Oct. 2006

Provided technical support for computer network, TV and phone related issues

Advised on issues such as security and copyright infringement

Electronic Learning Center (ELC) Group, Undergraduate Research Assistant

Aug. 2003 – May 2004 Advisor: Dr. Amy Bruckman

Programmed an IRC based chat server to monitor and analyze online conversations

Created a web-based admin system with a role-based authentication system

Self-taught and used C#/ASP.NET SQL, Java, Apache and IIS for the system

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College of Computing, Georgia Institute of Technology, Teaching Assistant

Aug. 2003 – May. 2004

Led recitations and review sessions and designed homework, labs and exams

Taught object oriented programming honors class (CS1322X)

AWARDS:

2009 IMAPS International Symposium on Microelectronics Best Student Paper Award

2009 IMAPS International Symposium on Microelectronics Best in Session Paper Award

2009 SRC TECHCON Best in Session Paper Award

PUBLICATIONS:

Refereed Journal

[1] J. H. Lai, **H. S. Yang**, H. Chen, C. R. King, J. Zaveri, M. S. Bakir, "Improved Through-Silicon-Via Fabrication for Thick Wafers Containing MEMS/Sensor Devices," Journal of Microelectronics Engineering, 2009 (accepted for publication)

Refereed Conference Proceedings

[1] J. Zaveri, C. R. King, **H. S. Yang**, M. S. Bakir, "Wafer Level Batch Fabrication of Silicon Microchannel Heat Sinks and Electrical Through Silicon Vias," SRC TECHCON, Austin, TX, Sept. 2009.

[2] C. R. King, J. Zaveri, **H. S. Yang**, M. S. Bakir, J. D. Meindl, "Electro-Fluidic C4 Interconnections for Inter-Layer Liquid Cooling of 3D ICs," SRC TECHCON, Austin, TX, Sept. 2009.

[3] J. Zaveri, C. R. King, **H. S. Yang**, M. S. Bakir, "Wafer Level Batch Fabrication of Silicon Microchannel Heat Sink and Electrical Through-Silicon Vias for 3D ICs", IMAPS 42nd International Symposium on Microelectronics, San Jose, CA Nov. 2009.

[4] **H. S. Yang**, M. Bakir, "Mechanically Flexible Interconnects with High Out-of-Plane Range-of-Movement and Thick Wafer Through Silicon Vias for CMOS and MEMS Integration," IEEE 60th Electronic Components and Technology Conference, Las Vegas, NV June 2010. (accepted)

Presentations

[1] **H. S. Yang**, M. Bakir, "Marriage of CMOS and MEMS," SRC GRC Review, Atlanta, GA, June 2009.

Poster Sessions

[1] **H. S. Yang**, H. Chen, J. H. Lai, J. D. Meindl, M. Bakir, "Marriage of CMOS and MEMS," SRC GRC Review, Atlanta, GA, June 2009.

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Media Coverage

[1] T. Adams, "A Cool Innovation Stacks Microprocessors", Chip Scale Review, Jan. 2009 Issue

RELATED COURSEWORK:

Microsystems

IC Fabrication, Semiconductor Process Control, Electronic Packaging Assembly, Microelectronic Systems Packaging, Integrated Optics

Computer Engineering

Physical Design Automation, Advanced VLSI Systems, Digital Systems Test, Internetwork Programming, Computer Languages and Translations, Computer Architecture, Low Noise Electronics

Others

Legal Issues in Tech Transfer, Ethics and Technology Profession, Science/Technology and Human Values

SKILLS:

Microsystems Fabrication Skills

- Compliant interconnect fabrication
- Microfluidic channel/via fabrication
- Flipchip assembly, compliant interconnect assembly
- Through-Silicon-Via(TSV) fabrication
- **Processing Equipments:** Photolithography tools, sputtering, electron-beam evaporation, metal electroplating (Ni, Cu, Au, Solder), Plasma Enhanced Chemical Vapor Deposition (PECVD), Reactive Ion Etching tools (RIE), wet chemical etching, wafer to wafer bonding, Chemical-Mechanical Planarization (CMP)
- **Characterization Tools:** Scanning Electron Microscope (SEM), refractometry, contact profilometry, X-ray tomography

Design, Layout, and Simulation Software

- Microsystems (CMOS, MEMS etc) mask design experience
- ANSYS Workbench FEM modeling and simulations
- MATLAB, MathCAD, SPICE, Cadence Virtuoso, Mentor Calibre

Computer Skills

- IT Certifications
 - Microsoft Certified Systems Engineer (MCSE)
 - Microsoft Certified Systems Administrator (MCSA) – Charter Member
 - Microsoft Certified Database Administrator (MCDBA)

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➤ CIW Associate

- Software Engineering: C, C++, C#, JAVA, ASP.NET, SQL, IIS, Python,

Other

- Expert-level skier
- GT sailing/windsurfing club
- Certified skydiver w/ ~100 jumps
- Argentina tango and salsa
- Fluent in Korean and English
- IRB certified