

HYUN JIN KIM

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EDUCATION

University of Illinois at Urbana-Champaign (UIUC), Champaign, IL
Ph.D. in Theoretical and Applied Mechanics (*Advisor: Anthony M. Jacobi*) May 2014 - Present
M.S. in Mechanical Engineering Jan. 2012 - May 2014

Rice University, Houston, TX
B.S. in Mechanical Engineering Aug. 2007 - May 2011
B.A. in Visual Arts Aug. 2007 - May 2011

Indian Institute of Technology (IIT) Bombay, Mumbai, India
Rice Engineering Student Exchange program at IIT Jan. 2009 - July 2009

RESEARCH EXPERIENCE

Research Assistant, *Air Conditioning and Refrigeration Center (ACRC), UIUC* Jan. 2016 - Present

- Determine the heat transfer and pressure drop correlations for evaporation and condensation of various two-phase flows refrigerants (R-134a, R-410a, R-407c, etc.) inside brazed plate heat exchangers
- Designed and built an apparatus to study heat transfer at different vapor quality, heat flux, mass flux, and pressure

Clean Energy Education Fellow, *The Graduate College, UIUC* Aug. 2014 - May 2016

- Constructed intermediate scale model wind farm for conducting experiments on its bulk power output and environmental impacts
- Prototyped unmanned aerial vehicle (UAV) based flow measurement system utilizing hexacopter kits with GPS and Arduino platform
- Mentored and led a team of three undergraduate research assistants to pilots a fleet of hexacopters for collecting turbulent wind and wake data

INDUSTRY EXPERIENCE

Fluid Dynamics Intern, *Daimler Trucks North America* May 2015 - Aug. 2015

- Conducted particle image velocimetry (PIV) measurements on a full-scale truck body inside the wind tunnel to visualize the detailed flow field around vehicle components
- Analyzed the PIV results for correlation with computational fluid dynamics (CFD) simulations and verification of component design upgrades for drag reduction
- Developed test plans and operated experiments in wind tunnel for vehicle drag reduction effort

Manufacturing Intern, *Schlumberger* May 2011 - Nov. 2011

- Developed Standard Work Instructions for Modular Formation Dynamics Tester tools
- Enhanced warehouse management with visualized part picking methods and aged inventory reduction

Mechanical Engineering Intern, *Schlumberger* June 2010 - Aug. 2010

- Assisted test engineers to conduct dynamic seal mechanical tests and suggested enhanced test fixture
- Prepared Test and Qualification Design Book and Dynamic Seal Chart
- Suggested new chemical and abrasion tests for better test reliability

PUBLICATIONS

N. Möller, **H. Kim**, M. H. García, and L. P. Chamorro (2016). "On the Near-wall Effects Induced by an Axial-flow Rotor." *Renewable Energy* 91: 524-530.

H. Kim and D. C. Kyritsis (2013). "Exergetic Analysis of Power Plants Operating on Biomaterials." In Proc. of Power and Energy Conference at Illinois, Champaign-Urbana, IL.

J. Zhu, **H. Kim**, and S. G. Kapoor (2013). "Micro-scale Drilling of Bulk Metallic Glass." *Journal of Micro and Nano-Manufacturing* 1(4), 041004.

J. Zhu, **H. Kim**, and S. G. Kapoor (2013). "Micro-scale Drilling of Bulk Metallic Glass." In Proc. of International Conference on Micromanufacturing (ICOMM), Victoria, BC, Canada.

TEACHING EXPERIENCE

Teaching Assistant, College of Engineering, UIUC

Computer Aided Design (ME 170) Jan. 2014 - May 2014

- Led weekly laboratory and help sessions to assist students' Creo Parametric software training
- Consulted student design projects and provided feedback on CAD models

Computer-Aided Manufacturing Systems and Design (ME 451) Aug. 2012 - Dec. 2013

- Led lab sessions on CAD, CNC (Computer Numerical Control) machining, CMM (Coordinate-Measuring Machine) and optical metrology, quality control, additive manufacturing, and robotics
- Developed new lab programs for additive manufacturing and quality control topics

Design for Manufacturability (ME 350) Jan. 2013 - May 2013

- Led lab sessions on CAD, CAM (Computer Aided Manufacturing), rapid prototyping, injection molding, sand casting, DOE (Design of Experiments), FBC (Feature Based Costing), and assembly design

LEADERSHIP AND INVOLVEMENT

Attendee Relations Coordinator, Women Empowered in STEM Conference May. 2015 - Apr. 2016

- Managed the conference application and registration procedures for 114 UIUC students, 24 non-UIUC attendees, and 19 speakers and guests
- Reviewed the applications and allocated total \$3,875 travel grants for 16 non-UIUC attendees

Finance Coordinator, Inaugural Women Empowered in STEM Conference Aug. 2012 - Apr. 2013

- Managed budget of \$31,500 for the inaugural conference
- Arranged speakers from ExxonMobil (Ms. Marilyn Tears) and PowerWorld (Dr. Kate Rogers Davis)
- Secured \$3,000 sponsorship from the Department of Electrical and Computer Engineering at UIUC

Co-Founder, GradSWE at UIUC, Society of Women Engineers (SWE) Jan. 2012 - Aug. 2012

- Initiated helpful programs for graduate students, including biweekly Brown Bag Lunch Series with topics on professional and academic development

AWARDS

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| Clean Energy Education Fellowship, UIUC | 2014 |
| Link Foundation Energy Fellowship (Honorable Mention), Link Foundation | 2014 |
| Lydia I. Pickup Memorial Scholarship (declined by the awardee), SWE | 2014 |
| Best Paper Award, International Conference on Micromanufacturing | 2013 |
| George P. and Amanda B. Hanley Scholarship, UIUC | 2012 |
| Charles Wert India-Illinois Scholarship, UIUC | 2012 |