

# JIU (JOE) XU

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## SUMMARY

- Seeking for mechanical engineer position with a focus on thermal and fluids.
  - Proficient numerical simulation skills including computational fluid dynamics (CFD) and finite element analysis (FEA).
  - 5-year hands-on experience with HVAC system design, test and modeling.
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## EDUCATION

- Ph.D. in Mechanical Engineering, University of Illinois at Urbana-Champaign** 12/2015 - 05/2018
- M.S. in Mechanical Engineering, University of Illinois at Urbana-Champaign** 08/2013 - 12/2015
- ASHRAE Grant-In-Aid Fellowship, ASHRAE Central Illinois Scholarship, GPA 3.8/4.0
- B.S. in Mechanical Engineering, University of Science and Technology of China** 09/2009 - 07/2013
- Sum cum laude (rank 1/54), China National Scholarship, GPA 3.9/4.0
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## EXPERIENCE

- R&D Intern, Bitzer SE** 08/2016 - 09/2016
- Simulated refrigerant-oil multiphase flow inside compressor with CFD.
  - Designed oil separator for R134a and ammonia HVAC systems.
  - Analyzed test data of screw compressor performance and durability.

- Research Assistant, Air Conditioning and Refrigeration Center, University of Illinois** 08/2013 - Present
- Involving in industry sponsored projects, giving report to 30+ companies, communicating with 50+ experienced engineers.
  - Studying oil-refrigerant separation in compressor by system-level experiments and numerical simulation.
  - Proficient fluid visualization skills with high-speed camera and digital image processing through Matlab.
  - Designing and analyze oil separator structure by ProE, Solidworks and ANSYS fluent.
  - Built a residential air conditioning system used for subcooling control research for commercial available products.
  - Tutored 80+ undergraduates in lab sections of Design for Manufacturability, including CNC machining, rapid prototyping, sand casting and injection molding.

- Engineering Intern, Beiang Tech** 12/2013 - 01/2014
- Designed a standardized test scheme for air purifiers, which contributed to *China National Standard for Air Purifier*.
  - Simulated and tested electro-magnetic fanless air purifiers in the laboratory.

- Research Assistant, Thermal Control Lab, University of Science and Technology of China** 11/2011 - 06/2013
- Hands-on experience with photovoltaic cell fabrication and built a thermal photovoltaic energy system.
  - Studied zinc diffusion in solar cell by numerical simulation and published on *Solar Energy Materials & Solar Cells*.
  - Realized numerical simulation of near-field thermal radiation for semiconductor thermal management.
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## SKILLS

- Software** Matlab, ANSYS Fluent, EES, LabVIEW(CLAD Certificate), AutoCAD, ProE, Solidworks, NX
- Programming** Python, VBA, C
- Manufacturing** 3D printing, CNC machining, Injection molding, Sand casting, Selective laser sintering, Stereolithography
- Languages** Mandarin (native), Japanese (basic), German (basic)
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## AFFILIATIONS

- American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE)
- American Society of Mechanical Engineers (ASME)
- Society of Automotive Engineers (SAE)