

Vincent Lee

EDUCATION

Georgia Institute of Technology, Atlanta, Georgia. 2015-Present

- Degree: Masters and PhD in Mechanical Engineering
- Graduation: May 2020

Iowa State University, Ames, Iowa. 2012-2015

- Degree: Bachelor of Science in Mechanical Engineering
- GPA: 3.87/4.0 Core/Major GPA: 3.89

RESEARCH & WORK EXPERIENCE

Georgia Institute of Technology

Graduate Research Assistant in Multiphase flow - Professor Cyrus Aidun 2015-Present

- Analyze multiphase forming technology and flow characteristics in the forming section for significant reduction in water and energy in paper making.
- Perform computational fluid dynamics (CFD) involving air-water-fiber suspension using a direct numerical simulation (DNS) method based on the lattice Boltzmann approach.
- Study the effect of air bubbles, flow characteristics, fiber properties, and fiber-fiber interactions on the orientation of fibers in the foam flow environment.

Iowa State University

Undergraduate research in Microfluidics - Professor Daniel Attinger 2014-2015

- Investigated a traditional Chinese terracotta jetting device driven by thermal expansion.
- Developed analytical solution to simulate, characterize, and optimize the performance of thermally driven water jet involving thermodynamics, fluid mechanics, and heat transfer.
- Performed high-speed imaging and thermal visualization to measure and validate numerical model.

System dynamics lab - Professor Greg Luecke Summer 2015

- Developed MATLAB code and Simulink program to model system dynamics, frequency response of an oscillating system, and analyze large data files.
- Utilized smartphone build-in accelerometer to perform instrumentation and data measurement.

NASA Goddard Space Flight Center, Greenbelt, Maryland. Jun 2014 - Aug 2014

Materials Engineering and Detector Systems Branches - *Student Engineer*

- Worked on Mechanical and electrical characterization of micro-electro-mechanical systems (MEMS) and small-scale structures.
- Designed and programmed a piezoelectric stack actuation system to improve the rapid mechanical probing capabilities of an existing micro-scale mechanical testing platform.
- Setup variable electrical pulses, automated frequency scanning, light pulse controller, phase imaging system to characterize the resonant frequency mode of the microshutter arrays from James Webb Space Telescope (JWST).

PRESENTATIONS & PROJECTS

Hach Company, Ames, Iowa.

Capstone design project Spring 2015

- Developed an automated assembly system for bottle assembly plant dealing with hazardous chemicals.
- Designed and fabricated working prototype for the mechanical gripper and sliding systems to cap and insert a rubber gasket into a bottle with small tolerance.

- Identified structural weaknesses in 3D-printed objects and proposed design improvements.

Power Train Design Project

- Designed a two-stage gear reduction system for turboprop engine 2014
- Fabricated a human powered rotating drum with ducted fan for more effective rice drying technique in the third world country. 2013

SCHOLARSHIPS & AWARDS

Georgia Institute of Technology

- Paper Science and Engineering Fellowship 2015-Present
- President's Fellowship 2015-Present

Iowa State University

- Seward, Ratcliffe, & Galloway Foundation Mechanical Engineering Scholarship 2014-2015
- Transfer Achievement Award 2012-2015
- Presidential Award for Transfer Excellence 2012-2015

Professional and Honor Societies

- American Society of Mechanical Engineers (ASME) 2013-Present
- American Institute of Aeronautics and Astronautics (AIAA) 2014-Present
- Phi Kappa Phi Honor Society Inducted 2014
- Tau Beta Pi Engineering Honor Society Inducted 2014
- Pi Tau Sigma Mechanical Engineering Honor Society Inducted 2013

Presentations

- Addressing Educational Attainment for Disadvantaged Students 2015
- Shockwave effect on jet engine performance, gas pressure, temperature, and nozzle velocity 2013
- Debating National Policy on Privatizing Space Exploration 2013

Other Awards

- NASA Robotic Mining Competition - 1st place in autonomous category 2014

SKILLS

Computer/Software/Programming

- Engineering Equations solver (EES), MATLAB, Simulink, NI LabVIEW, Python, CFD, lattice Boltzmann, Solidworks, Mastercam, Microsoft Word, Excel, PowerPoint, and Publisher, and Adobe InDesign

Lab Skills

- Frequency and phase based image capturing systems
- NI LabVIEW instrument control and data acquisition
- Hardware communication: RS-232, GPIB, and TCPIP
- Agilent DC Power Supply Remote Interface
- High-speed camera and Infrared imaging system
- Micro-scale mechanical test setup
- Goniometer measurements
- Piezoelectric stack actuator
- Light pulse controller
- Capacitive displacement sensor

Languages

- Fluent in English, Mandarin, and Malay.

PERSONAL INTERESTS

Aviation Technology and Green Energy Systems

- Fundamental aerodynamics and physical principles of aircraft flight,
- Thermodynamic design and performance of jet engines, GE Adaptive Cycle Engine (ACE).

- Hybrid electric propulsion system, landing gear regenerative braking and electric taxiing system.
- Flight navigational sensors and GPS tracking system, solar water splitting technology.

LEADERSHIP & ORGANIZATIONS

Leader in Lighthouse International Fellowship (LIFE) 2012-Present

- Socialize with people from various cultures and international backgrounds.
- Help international students make a well-integrated transition in the US through diverse cultural, educational and leadership opportunities.
- Organize events and facilitate cultural discussion.

Leader in New Student Orientation Program 2013-2015

- Welcome, guide, and assist new students to Iowa State University.
- Perform campus tour, familiarize student with the new campus environment.
- Encourage student participation in clubs and organizations, get student ready for campus life.

Cyclone Space Mining Club 2013-2014

- Build and test light-weight materials for robot design.
- Perform outreach activities and promote STEM education.
- Participate in NASA Robotic Mining Competition