

VIVEK S. GARIMELLA

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EDUCATION

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN, Urbana-Champaign, IL *August 2021 – Present*

- Candidate for Doctor of Philosophy in Mechanical Science and Engineering

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, GA

August 2017 – May 2021

- Bachelor of Science in Mechanical Engineering – Highest Honors
- GPA: 3.55
- Honors: The Georgia Tech William Gilmer Perry Award (April 2018), Mr. Georgia Tech Finalist (October 2020)
- Opportunities: Sustainable Development and Climate Change Study Abroad, Illuminate Tech Student Speaker (2020)

EXPERIENCE

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN, Urbana-Champaign, IL *August 2021 – Present*
Graduate Research Assistant, Energy Transport Research Laboratory

NATIONAL RENEWABLE ENERGY LABORATORY, Golden, CO

June 2020 – August 2020

U.S. Department of Energy Science Undergraduate Laboratory Intern

- Develop transient subsystem and system-level models for Liquid Desiccant HVAC (LDHVAC) performance analysis:
 - Conduct Heat Exchanger performance simulation in MATLAB/Simulink using ϵ -NTU and regression methods
 - Characterize thermal masses and time constants of HVAC subsystems using regression algorithms
 - Characterize effects of load shifting and transient loads within LDHVAC system
 - Conduct Step-Change analysis on system performance implications of varied inlet desiccant and air conditions
 - Create system-level transient Simulink model to track thermophysical properties of air and desiccant

CARRIER CORPORATION, Charlotte, NC

May 2019 – August 2019

Mechanical Engineering Intern – Commercial Applied Chillers

- Aid in the research and development of high-efficiency commercial HVAC systems utilizing novel low global warming potential (GWP) refrigerants and innovative components.
- Analyze existing HVAC product families to determine forcing factors for subcomponent and overall chiller costs.
- Create a Global Cost Model Template for future low-GWP chillers.
- Coordinate part acquisition and prototype manufacturing for proof-of-concept builds.
- Perform CAD modifications in Creo Parametric for large-scale HVAC system models

GEORGIA INSTITUTE OF TECHNOLOGY, Atlanta, GA

July 2018 – May 2019

Undergraduate Research Assistant, Nondestructive Evaluation Laboratory

- Determine and compare microstructural integrity of specific metal material variation and manufacturing methods
- Perform Rayleigh Wave propagation data collection using oscilloscopes, transducers and waveform generators
- Analyze data using MATLAB to generate nonlinearity (β) parameter of material variants and plot waveform data

ACTIVITIES AND LEADERSHIP

Member, Kendeda Building for Innovative Sustainable Design Advisory Board

July 2020 – May 2021

Georgia Tech Student Government Association:

- *Joint Director of Sustainability* *January 2020 – May 2020*
 - Collaborate with campus departments to improve sustainability of large-scale campus infrastructure, e.g. transportation, new construction, HVAC, dining services and waste management
 - Catalyzed development of infrastructure plans towards hybrid and EV public transportation
 - Oversee Executive Sustainability Committee; transition to Joint (Undergraduate and Graduate) structure
 - Participate in campus-wide strategic planning for sustainability
- *Mechanical Engineering Representative* *September 2019 – January 2020*
- *Member, Executive Sustainability Committee* *August 2017 – May 2020*
- *Co-Chair, Executive Sustainability Committee* *August 2018 – May 2019*
 - Organize campus-wide sustainability events and initiatives
 - Work with campus administration and organizations to promote sustainable policies, practices, and facilities
 - Organize and run bi-weekly committee meetings to facilitate initiative progress
 - Interface with corporate partners to build lasting infrastructure for campus sustainability
 - Discuss the state of sustainability on college and university campuses with campus, city and state leaders

SKILLS

Technical: SolidWorks, Creo, LabVIEW, MATLAB, Cost Model Development, Thermodynamic Cycle Analysis, Simulink, Engineering Equation Solver, Thermal System Modeling, HOMER

Communication: French (Fluent), Public Speaking, Project Management, Summary Report Writing, Team Leadership