

Arjun Thangaraj Ramshankar
Fifth-year PhD Candidate, Civil Engineering
School of Civil and Environmental Engineering
Georgia Tech

I. Earned Degrees

- B. Tech Mechanical Engineering, IIT Palakkad 2020

II. Employment History

- Graduate Research Assistant, Georgia Institute of Technology 2021-Present
- Research Assistant, IIT Palakkad 2020-2021
- Research Intern, VJP Aluminum 2019
- Research Intern, Larsen and Toubro Defense 2018

III. Honors and Awards

- CEE Graduate Student Mentoring Award (2025)
- B.Tech Project Excellence Award (2020)

IV. Research, Scholarship, and Creative Articles

A. Published Books, Book Chapters, and Edited Volumes

A1. Refereed Book Chapters

1. Mishra, Anurag, R. Arjun Thangaraj, and Pramod S. Mehta. "Life Cycle Analysis for Biodiesel Fuels—A Holistic Approach." *Smart Technologies for Energy, Environment and Sustainable Development*, Vol 2: 359.

B. Refereed Publications and Submitted Articles

B1. Published and Accepted Journal Articles

1. Yunus, A. I., Ramshankar, A. T., Akinsemoyin, Z., Igou, T., Pinto, A., Fu, G. Y., Chen, Y., & Bozeman, J. F. (2025). Leveraging Wastewater Resource Recovery to Reduce Landfill Organic Loading: Process Modeling, Environmental, and Economic Impact Assessment. *Results in Engineering*, 108822.
2. Ramshankar, A. T., Farmer, K. D., Menon, A. K. & Bozeman, J. F. Scalability of hemp-based thermal insulation in the United States – A Monte Carlo-based techno-economic approach. *Journal of Cleaner Production* **493**, 144952 (2025).
3. Bozeman III, J.F., Hollauer, C., Ramshankar, A., Nakkasunchi, S., Jambeck, J., Hicks, A., Bilec, M., McCauley, and Heidrich, O. Embed systemic equity throughout industrial ecology applications: How to address machine learning unfairness and bias. *Journal of Industrial Ecology* **28**, 1362–1376 (2024).
4. Juang, Jason, Wyatt Green Williams, Arjun T. Ramshankar, John Schmidt, Kendrick Xuan, and Joe F. Bozeman III. "A multi-scale lifecycle and techno-economic framework for higher education fleet electrification" *Scientific Reports* 14, no. 1 (2024): 4938.

5. Ramshankar, Arjun Thangaraj, Aditya Girish Desai, Julien Artur De La Villarmois, and Joe Frank Bozeman III. "Sustainability analysis of overhead cable line powered freight trucks: A life cycle impact and techno-economic assessment toward transport electrification." *Environmental Research: Infrastructure and Sustainability* 3, no. 1 (2023): 015010.
6. Mishra, Anurag, Arjun Thangaraj R, and Pramod S. Mehta. "Farm-to-fire analysis of Karanja biodiesel." *Biofuels, Bioproducts and Biorefining* 15, no. 6 (2021): 1737-1752.

C. Under Review Manuscripts

1. Ramshankar, A.T., Acevedo, S., Bozeman III J.F., "Data-Driven Embodied Carbon Intensity Prediction for Commercial Buildings Using Gaussian Process Regression." *Journal of Industrial Ecology*. Submitted Nov 21st, 2025.
2. Jermak, M.E., Ramshankar, A.T., Cribb, S.B., Ashton, W., Patterson, R., Bednar, D., Fann, P., and Bozeman, J.F. "A critical review of S-LCA methods since the UNEP 2020 Guidelines: Lingerin g challenges in the search for standardization". *Journal of Industrial Ecology*. Submitted Dec 11th, 2025.

D. Under Preparation Manuscripts

1. Ramshankar, A.T., Bozeman III J.F., "Circularity in Commercial Buildings: Current trends, and future of building materials cycles".
2. Ramshankar, A.T., Bozeman III J.F., "Statistical benchmark of embodied carbon of commercial buildings in the US."
3. Bozeman, R., Dickson, J., Ramshankar, A.T., Hollauer, C., Lee, S., and Bozeman, J.F. "A Convergent Approach to Understanding and Investigating Pro-Environmental Behavior Spillover Effects: More than Meatless Mondays"

E. Other Publications and Creative Products

E1. Other Creative Products

1. Poster: Ramshankar, A.T., Farmer K.D, and Bozeman, J.F., III. "Scalability of Hemp-based Thermal Insulation in the United States – A Circular Life Cycle Sustainability Approach." 12th International Conference on Industrial Ecology- ISIE. Singapore. July 2025.
2. Poster: Jermak, M.E., Ramshankar, A.T., Cribb, S.B., and Bozeman, J.F., III. "Lingerin g difficulties in the search for standardization: A critical review of social life cycle assessment methods since 2020." 12th International Conference on Industrial Ecology- ISIE. Singapore. July 2025.

3. Poster: Yunus, A., Ramshankar, A.T., Pinto., Igou., Srinivas, J., Meyer, M., Fu, G., Chen, Y., and Bozeman, J.F., III. "From Waste to Resource: Evaluating the Environmental Sustainability of Food Waste Treatment in Wastewater Resource Recovery Facilities Versus Landfilling." 32nd International Symposium on Sustainable Systems and Technology – ISSST 2025. Minneapolis, Minnesota, USA. June 2025.
4. Poster: Jermak, M.E., Ramshankar, A.T., Cribb, S.B., and Bozeman, J.F., III. "Addressing data availability concerns in Social Life Cycle Assessment through a critical review on the United States manufacturing sector." 32nd International Symposium on Sustainable Systems and Technology – ISSST 2025. Minneapolis, Minnesota, USA. June 2025.
5. Poster: Ramshankar, A.T., Farmer K.D, and Bozeman, J.F., III. "Scalability of Hemp-based Thermal Insulation in the United States – A Monte Carlo-based Techno-economic Approach." 32nd International Symposium on Sustainable Systems and Technology – ISSST 2025. Minneapolis, Minnesota, USA. June 2025.
6. Poster: Ramshankar, A.T., Farmer K.D, and Bozeman, J.F., III. "Scalability of Hemp-based Thermal Insulation in the United States – A Monte Carlo-based Techno-economic Approach". *Feedstocks and Processes for Sustainable Manufacturing of Chemicals and Materials*, Gordon Research Conference (Biomass to Biobased Chemicals and Materials). Newry, Maine, USA. June 2025.
7. Poster: Ramshankar, A.T., Farmer K.D, and Bozeman, J.F., III. "Scalability of Hemp-based Thermal Insulation in the United States – A Monte Carlo-based Techno-economic Approach". *Sustainable and Circular Solutions Towards a Bio-Based Chemical Industry*, Gordon Research Seminar (Biomass to Biobased Chemicals and Materials). Newry, Maine, USA. June 2025.
8. Poster: Ramshankar, A.T., Farmer K.D, and Bozeman, J.F., III. "Scalability of Hemp-based Thermal Insulation in the United States – A Monte Carlo-based Techno-economic Approach". International Industrial Ecology Day 2024 (virtual) November 2024.
9. Poster: Ramshankar, A.T., Williams W., and Bozeman, J.F., III. "Circular Scalability in the Built Environment: Integrating Industry into Life Cycle and Techno-economic Assessment". *Action-Oriented Industrial Ecology Science*, Gordon Research Conference (Industrial Ecology). Les Diablerets, Vaud, Switzerland. May 2024.
10. Poster: Williams W., Ramshankar, A.T., and Bozeman, J.F., III. "Who Our Waste Hurts: Tracking the Environmental Impacts of Solid Waste Facilities in the United States" *Action-Oriented Industrial Ecology Science*, Gordon Research Conference (Industrial Ecology). Les Diablerets, Vaud, Switzerland. May 2024.
11. Poster: Ramshankar, A.T., Ferguson, E., Jamshidi, E., Menon, A., Kalaitzidou, K., and Bozeman, J.F., III. "Sustainably Sourced Natural Fibers for Thermal Insulation

in Buildings – A Lifecycle Perspective” Renewable Bioproducts Institute Workshop on “The Emerging Bioeconomy and the Future of Biorefining”. Atlanta, GA. March 2024.

12. Poster: Ramshankar, A.T., Ferguson, E., Jamshidi, E., Menon, A., Kalaitzidou, K., and Bozeman, J.F., III. “Sustainably Sourced Natural Fibers for Thermal Insulation in Buildings.” Renewable Bioproducts Institute Workshop on Packaging Innovation and the Circular Economy. Atlanta, GA. May 2023.
13. Poster: Ramshankar, A.T., Desai, A., Villarmois, J.A., and Bozeman, J.F., III. “Sustainability analysis of Overhead Cable Line powered freight trucks: A life cycle impact and techno-economic assessment toward transport electrification.” Southeastern Energy Conference. Atlanta, GA. April 2023.
14. Poster: Ramshankar, A.T., Lee, S., Aggarwal, A., Zheng, A., Ambrose, P., Brown, M., Struthers, C., and Bozeman III, J.F. “Impact of Pro-Environmental Lifestyle Choices Across Sociodemographic Subgroups in the Southern United States.” *Advancing the Circular Economy for Human and Planetary Wellbeing*, Gordon Research Conference (Industrial Ecology). Sunday River, ME. June 2022.
15. Poster: Ramshankar, A.T., Lee, S., Aggarwal, A., Zheng, A., Ambrose, P., Brown, M., Struthers, C., and Bozeman III, J.F. “Impact of Pro-Environmental Lifestyle Choices Across Sociodemographic Subgroups in the Southern United States.” *Turning Research into Practice: Complexities of Industrial Ecology Implementation*, Gordon Research Seminar (Industrial Ecology). Sunday River, ME. June 2022.

F. Presentations

F1. Invited Conference and Workshop Presentations

1. Ramshankar, A.T., “Sustainability analysis of Overhead Cable Line powered freight trucks: A life cycle impact and techno-economic assessment toward transport electrification.” *Lightning Research Presentations on Energy Policy*”, Energy Policy and Innovation Center (EPI Center), Strategic Energy Institute, Georgia Tech, GA. February 2024.

F2. Invited Seminars

1. Ramshankar, A.T. “EVs, Hemp Insulation, and Predicting Embodied Carbon – Utilizing Industrial Ecology for Actionable Insights.” *UT San Antonio Graduate Seminar Series*. Remote. February 2026.

F3. Conference and Workshop Presentations

1. Ramshankar, A.T., Farmer K.D, and Bozeman, J.F., III. “Scalability of Hemp-based Thermal Insulation in the United States – A Monte Carlo-based Techno-economic Approach.” American Center for Life Cycle Assessment (ACLCA) Conference 2025. Atlanta, Georgia, USA. September 2025.

2. Ramshankar, A.T., Farmer K.D, and Bozeman, J.F., III. “Scalability of Hemp-based Thermal Insulation in the United States – A Monte Carlo-based Techno-economic Approach.” 32nd International Symposium on Sustainable Systems and Technology – ISSST 2025. Minneapolis, Minnesota, USA. June 2025.
3. Ramshankar, A.T. and Desai, A “Life cycle assessment of Overhead Cable Line (OCL) powered freight trucks in Germany.” *Environmental Engineering and Science at the Confluence*, Association of Environmental Engineering and Science Professors. St. Louis, MO. June 2022.
4. Ramshankar, A.T. “Life cycle assessment of Overhead Cable Line (OCL) powered freight trucks in Germany.” *Turning Research into Practice: Complexities of Industrial Ecology Implementation*, Gordon Research Seminar (Industrial Ecology). Sunday River, ME. June 2022.

F4. Other Presentations

1. Invited Presenter (Ramshankar, A.T.): “Fleet Electrification Recommendation for Georgia Tech”, Georgia Tech Office of Sustainability, Georgia Tech, Atlanta, GA. March 2024.

F5. Guest Lectures

1. Lecture on “Introduction to Life Cycle Assessments and Life Cycle thinking in business applications”: MGT 6369 Sustainable Business Practicum, Oct 2025, Sep 2024.
2. Lecture on “Ecological Disasters”: CEE 6355 Industrial Ecology for Environmental Engineers, Aug 2024.
3. Lecture on “Engineering Communication, Report Writing and Presenting”: CEE 4160 Smart and Sustainable Cities, Mar 2024.
4. Lecture on “Life cycle assessment methods and software”: CEE 6355 Industrial Ecology for Environmental Engineers, Sep 2023.
5. Lecture on “Population Forecasting for Urban Design”: CEE 4160 Smart and Sustainable Cities, Feb 2023.
6. Lecture on “Life cycle assessment methods and software”: CEE 6355 Industrial Ecology for Environmental Engineers, Sep 2022.
7. Lecture on “Water systems for cities”: CEE 4160 Smart and Sustainable Cities, Feb 2022.

G. Media/ Societal Impacts

1. Press/Media: “[Study finds hemp insulation viable, but industry needs policy support to scale up](#)”, Hemp Today, March 2025.
2. Press/Media: “[Hemp insulation could transform US building industry, slashing emissions and creating jobs](#)”, Tech Xplore, February 2025.

3. Community/University: "[Using Hemp in Building Insulation Could Make Structures Greener, Create Jobs, and Be a Profitable Industry](#)", *College of Engineering*, Georgia Institute of Technology. Atlanta, GA. February 2025.
4. Press/Media: "[Three Experiments Could Help Electrify Big Trucks](#)", *Scientific American*, April 2024.
5. Press/Media: "[Environmental and economic benefits of overhead cable line technology to power trucks](#)", *Tech Xplore*, April 2023.
6. Community/University: "[Hitting the Brakes or the Accelerator on Electrified Semitrucks](#)." *College of Engineering*, Georgia Institute of Technology. Atlanta, GA. April 2023.

V. Education

A. Courses taught

Semester, Year	Course Number	Course Title	Number of Students
Fall 2025	CEE 6355	Industrial Ecology in Environmental Engineering	25
Spring 2025	CEE 1090	Exploring Civil and Environmental Engineering: Studio sessions	24
Spring 2026	CEE 1090	Exploring Civil and Environmental Engineering: Studio sessions	30