AISHWARYA VENKAT

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PROFESSIONAL SUMMARY

Experienced researcher and geospatial analyst studying systems resilience and climate-food-health nexus. Strengths include spatiotemporal alignment and data wrangling in Python and R to extract novel interdisciplinary insights. Subject matter expertise in food security and agriculture, acute malnutrition seasonality, diet costs and affordability, early warning systems, extreme weather measurement, disaster risk reduction, and risk information systems.

EDUCATION

Friedman School of Nutrition Science and Policy, Tufts University *May 2024*
PhD, Agriculture, Food, and Environment
Dissertation: Climate and Health: Extreme Events, Food Systems, and Nutrition

School of Engineering, Tufts University *May 2018*
MS, Environmental and Water Resources Engineering
Certificate in Water Systems, Science, and Society
Thesis: Sub-Basin Valuation of Groundwater in California, 2000-2016

Virginia Polytechnic Institute and State University (Virginia Tech) *May 2014*
BS, Biological Systems Engineering
Secondary Major Certificate, French

SKILLS

Spatial analysis: Python, R; ArcGIS, QGIS, Geoda, Google Earth Engine; Mapbox, Carto
Statistical analysis and data visualization: R, Python, Stata; Excel, Power BI, Tableau
Languages: English (fluent), French (advanced), Tamil (advanced), Hindi (advanced)
Other: Activity management, training, critical thinking, interdisciplinary communication

EXPERIENCE

Contractor (Research), Institute for Disease Modeling *March 2025 – August 2025*

Implemented literature review on spatiotemporal targeting of nutrition interventions
Extracted spatial, temporal, demographic, and maternal and child health indicators
Conducted landscape analysis and identified data gaps for optimization and scale-up

Research Fellow, Project Drawdown *September 2024 – August 2025*

Reviewed literature for a suite of emissions reduction solutions in the AFOLU sector
Extracted measures of current and potential adoption, costs, and reduction potential
Developed workflows and visualizations to quantify interactions between solutions

GIS Consultant, iDE Global *October 2024 – April 2025*

Developed geolocation survey and cloud-based analysis pipeline to support work planning in 12 countries for the *Transforming Lives Through Nutrition* project
Designed static maps and dynamic ArcGIS web application to facilitate subnational, multisectoral collaboration and donor reporting between three consortium partners
Developed a GIS Implementation Strategy and detailed technical documentation

Consultant, The Micronutrient Forum *2023-2023*

Developed and drafted literature review of climate hazard measurement in nutrition
Performed analysis of extreme weather events and stunting and wasting outcomes

Research Assistant, Food Prices for Nutrition Research Group at Tufts University *2020-2022*

Evaluated least-cost diets using World Bank International Comparisons Programme data and 11 dietary guidelines
Contributed analysis and validation of Cost of Healthy Diet metric for SOFI 2020-2022
Developed technical tools to facilitate calculation of Cost of Healthy Diet

Research Assistant, Feinstein International Center at Tufts University *2018-2020*

Conducted analysis of anthropometric and climatological data to contextualize acute malnutrition trends in Kenyan drylands
Performed study of short-term (1990-present) and long-term (1900-present) seasonal patterns of climatic indicators in the Darfur region and links to farmer-herder violence

Research Assistant, Center for Humanitarian Change *2019-2019*

Studied alignment of Integrated Phase Classification (IPC) and Household Hunger Scale (HHS) in SMART contexts with survey data from 336 households

GIS Lab Assistant, Data Lab at Tufts University *2014-2018*

Assisted students and faculty with geospatial projects; created and updated metadata
Designed and led *Intro to QGIS* and *Mapping Open Data in R* workshops

EcoHealthNet Research Exchange, EcoHealth Alliance *Summer 2017*

Collected data on commercial poultry production and live markets in seven countries for the *African Sustainable Livestock 2050* project
Generated network diffusion models from World Bank LSMS and USAID DHS surveys
Utilized geostatistical models to identify continental drivers of emerging zoonoses

Analysis Intern & Consultant, International Water Management Institute *2016-2017*

Evaluated target and actual progress across all WLE programs in 2015 and 2016
Mapped impact pathways and identified evidence gaps
Documented activities, goals, and targets for the 2015 and 2016 WLE Annual Reports

Water Program Intern, Ceres Inc. *Fall 2015*

Analyzed CDP disclosures from food and beverage companies to document emissions targets, progress, and achievement strategies
Developed data analyses and visualizations related to California drought

Research Assistant, AidData at the College of William and Mary *Summer 2015*

Harmonized climate and demographic covariates for geospatial impact evaluation of indigenous lands project in the Brazilian Amazon

Independent Consultant *Spring 2015*

Implemented vulnerability analysis to identify communities with low supply and high demand of basic human services in Jalisco, Mexico

GIS Intern, City of Medford, Massachusetts *Spring 2015*

Updated stormwater and sewer geodatabases and developed work maps
Identified homes and infrastructure vulnerable to floods based on FEMA Flood Maps

Research Assistant, WASH Advocates *Summer 2014*

Matched areas of highest cholera incidence with responders in Haiti and DR
Compiled congressional briefs, contributed to H.R. 2901 Water for the World Act

Intern, Meals on Wheels Association of America *Summer 2014*

Documented farmers markets accepting SNAP/EBT benefits in Virginia
Supported research and advocacy efforts around nutrition programs for elderly

Environmental Health and Safety Co-op, Georgia Pacific *Summer 2013*

Documented site-wide flow of noncombustible gases and leak points
Ensured compliance with RICE and FIFRA regulations and Clean Air Act standards

TEACHING ACTIVITIES AND ASSISTANTSHIPS

- UEP 294: Spatial Statistics, Tufts University (Spring 2019)
- EN 1: Applications of Climate Change Engineering, Tufts University (Fall 2016)
- CEE 194: Intro to GIS, Tufts University (Summer 2016)
- ENVR-S 171: Water, Health and Sustainable Development, Harvard University Extension School (Spring and Summer 2016)

HONORS AND AWARDS

Outstanding Recent Alumni, Virginia Tech College of Agriculture & Life Sciences 2020
N. Bruce and Lorry Hanes Endowed Fellowship 2016
United States Geospatial Intelligence Foundation Scholarship 2015
J. Lawrence & Lucille G. Calhoun Scholarship, 2013

PUBLICATIONS

Herforth, A., Bai, Y., **Venkat**, A., & Masters, W. A. (2025). The Healthy Diet Basket is a valid global standard that highlights lack of access to healthy and sustainable diets. *Nature Food,* 6:622–631.

Herforth, A.W., Gilbert, R., Sokourenko, K., Tehreem, F., Olutayo, A., Dawit, A., Alemayehu, D., Eunice, A., Bachewe, F., Bai, Y., Chiosa, I., Genye, T., Haile, H., Jahangeer, J., Kinabo, J., Mishili, F., Nnabugwu, C., Nortey, J., Ofosu-Baadu, B., Onabolu, A., Sarpong, D. B., Tessema, M., Duong, T. T. V., **Venkat, A.**, Masters, W. A. Monitoring the Cost and Affordability of a Healthy Diet within Countries: Building Systems in Ethiopia, Ghana, Malawi, Nigeria, Pakistan, Tanzania, and Viet Nam. (2024). *Current Developments in Nutrition*, 8 (10): 104441.

Venkat, A. (2024). Climate and Health: Extreme Weather, Food Systems, and Nutrition. (Doctoral dissertation, Tufts University).

Headey, D., and **Venkat, A**. (2024). Extreme weather and undernutrition: A critical but constructive review of the literature. IFPRI Discussion Paper 02236. Washington, DC: International Food Policy Research Institute.

Maxwell, D., Adan, G., Hailey, P., Day, M., Odhaimbo, S. B. J., Kaindi, L., Njiru, J., **Venkat, A.**, & Marshak, A. (2023). Using the household hunger scale to improve analysis and classification of severe food insecurity in famine-risk conditions: Evidence from three countries. *Food Policy*, 118: 102449.

Venkat, A., Marshak, A., Young, H., & Naumova, E.N (2023). Seasonality of Acute Malnutrition in African Drylands: Evidence From 15 Years of SMART Surveys . Food and Nutrition Bulletin. 44(2_suppl):S94-S108. doi:10.1177/03795721231178344.

Cliffer, I.R., Marshak, A., Schneider, K.R., **Venkat, A**., & Naumova, E.N. (2023). Seasonality of nutrition. In: Caballero, B. (Ed.), Encyclopedia of Human Nutrition, vol. 4. Elsevier, Academic Press, pp. 350–368.

Herforth, A., **Venkat, A**., Bai, Y., Costlow, L., Holleman, C. & Masters, W.A. (2022). Methods and options to monitor the cost and affordability of a healthy diet globally. Background paper for The State of Food Security and Nutrition in the World 2022. FAO Agricultural Development Economics Working Paper 22-03. Rome, FAO.

Marshak, A., **Venkat, A**., Young, H., & Naumova, E. N. (2021). How seasonality of malnutrition is measured and analyzed. International Journal of Environmental Research and Public Health, 18(4), 1828.

Herforth, A., Bai, Y., **Venkat, A.**, Mahrt, K., Ebel, A., & Masters, W. A. (2020). Cost and affordability of healthy diets across and within countries: Background paper for The State of Food Security and Nutrition in the World 2020. FAO Agricultural Development Economics Technical Study (Vol. 9). Food and Agriculture Organization.

FAO and Tufts University [Young, H., Marshak, A., & **Venkat, A.**]. (2019). Twin peaks: the seasonality of acute malnutrition, conflict and environmental factors – Chad, South Sudan and the Sudan. September 2019. Rome.

Venkat, A., Falconi, T. M. A., Cruz, M., Hartwick, M. A., Anandan, S., Kumar, N., Ward, H., Balaji, V., & Naumova, E. N. (2019). Spatiotemporal Patterns of Cholera Hospitalization in Vellore, India. International Journal of Environmental Research and Public Health, 16(21), 4257.

Simpson, R. B., **Venkat, A**., Alarcon, T., Chui, K., Naumov, Y., Gorski, J., Bhattacharyya, S. & Naumova, E. (2019). Calendar effects to forecast influenza seasonality: A case study in Milwaukee, WI. Online Journal of Public Health Informatics, 11(1).

Venkat, A. (2018). Sub-basin Valuation of Agriculture: A Crop-specific Assessment of Groundwater Footprints and Value in California. (Master of Science dissertation, Tufts University).

Cruz, M. S., Alarcon-Falconi, T. M., Hartwick, M. A., **Venkat, A.**, Ehrlich, H. Y., Anandan, S., & Naumova, E. N. (2017). From hospitalization records to surveillance: The use of local patient profiles to characterize cholera in Vellore, India. PloS one, 12(8), e0182642.

Gobierno del Estado de Jalisco [González, A. C. A., **Venkat, A.**, Jiménez, A. M. T., de Oca, Á. M. M.]. (2014). Estudio de identificación de las áreas de intervención estratégica que contribuyan a superar la pobreza en Jalisco. México.