

# AISHWARYA VENKAT

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## PROFESSIONAL SUMMARY

Experienced researcher and geospatial analyst studying food 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 remote sensing applications for food security and agriculture, extreme weather measurement, acute malnutrition seasonality, diet costs and affordability, and famine early warning.

## 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

- 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*  
Conducted comparison of least-cost diets using WB ICP data and 11 dietary guidelines  
Contributed analysis and evaluation 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 for geospatial datasets
  - 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
  - Identified continental drivers of emerging infectious diseases using geostatistical models
- 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 LLC***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)
- Tufts University GIS Data Lab Assistant (Fall 2014 – Spring 2018)
- 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 and 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**

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.