AISHWARYA VENKAT

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PROFESSIONAL SUMMARY

Experienced 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: R, Python, ArcGIS, QGIS, Geoda
Econometric modeling: R, Python, Stata
Languages: English, French, Tamil, Hindi

Scientific communication and writing
Ideation and methodology development
Activity management and training

EXPERIENCE

Consultant, The Micronutrient Forum *2023-2023*

Developed and drafted literature review of climate hazard measurement in nutrition
Performed analysis of extreme weather effects on stunting and wasting outcomes using 30 years of USAID Demographic and Health Surveys

Research Assistant, Food Prices for Nutrition Research Group at Tufts University *2020-2021*

Conducted comparison of least-cost diets using WB ICP data and 11 dietary guidelines
Contributed analysis of Cost of Healthy Diet metric for FAO SOFI 2020 and 2021
Developed technical tools to facilitate calculation of Cost of Healthy Diet

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

- *Contribution*: Conducted analysis of anthropometric and climatological data to contextualize acute malnutrition trends in Kenyan drylands
  Activity: NAWIRI (MILE) Development and Food Security Activities in Kenya
  Project Leads: CRS, FIC
- *Contribution*: Performed study of long-term climate patterns in Darfur
  Activity: Taadoud Transition to Development Project
  Project Leads: DFID, FIC
- *Contribution*: Implemented study of short-term (1990-present) seasonal patterns of climatic indicators in the Darfur region and links to farmer-herder violence
  Output: Twin peaks: seasonality of acute malnutrition, conflict, and environment
  Project Leads: FAO, FIC

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

Contribution: Studied alignment of Integrated Phase Classification (IPC) and Household Hunger Scale (HHS) in SMART contexts with survey data from 336 households
Output: Classifying Acute Food Insecurity Using the Household Hunger Scale: Evidence from Three Countries

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

Assisted students and faculty with geospatial projects
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 water risks in food, beverage, agriculture and oil and gas sectors
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
Output: Estudio de identificación de las áreas de intervención estratégica que contribuyan a superar la pobreza en Jalisco

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

Updated stormwater and sewer geodatabases, developed work 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

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

VOLUNTEER ACTIVITIES

2023 Tufts University Famine Forecasting Hackathon
Collaborated with interdisciplinary team of conveners to compile presentations and datasets, designed website, facilitated analysis and discussions with two global teams

Co-Chair, 2018 Nutrition Data Summit
Coordinated with student volunteer committee to plan sessions, invited and scheduled panelists and plenary speakers, managed event logistics, designed website and program

PUBLICATIONS

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

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.

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.