Lav Varshney

Associate Professor

Department of Electrical and Computer Engineering
Affiliate Research Page
Email: varshney@illinois.edu

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Although people might want to pursue particular nutritious and sustainable diets, personalized flavor is what will really drive behavior. We aim to develop generative AI methods to develop culinary recipes that are easy, flavorful, diverse, and trusted. We also aim to study the causal impacts of diet (including spices) on health and wellbeing.

Kenyan Brussels Sprouts Gratin generated by the IBM Chef Watson culinary computational creativity system.

Research Interests

- Generative AI for flavorful and nutritious culinary recipes
- Causal inference on longitudinal data to understand healthy aging
- Food supply chain resilience and sustainability
- Network science approaches to understand herbs and spices
- Wastewater treatment for food manufacturing

Current Projects

- Generative AI for personalized flavorful culinary recipes
- Health impacts of herbs and spices
- Longitudinal study of diet impacts on health and wellbeing

Keywords

Artificial intelligence, generative AI, causal inference, longitudinal data, flavor science, wastewater treatment, herbs and spices, food supply chain resilience

Interest Areas for Collaboration/Future Work

Prof. Varshney is interested in applying interpretable machine learning and AI techniques for making scientific discoveries about flavor, health, and wellbeing with colleagues that are domain experts in these fields.

He is also interested in pushing forward generative AI for flavorful culinary recipes under various nutritional constraints of interest to colleagues.

University of Illinois Urbana-Champaign
Carl R. Woese Institute of Genomic Biology
1206 West Gregory Drive | Office 3113, MC 195
Urbana, IL 61801
personalizednutrition@illinois.edu