

PHD POSITIONS – Shafiee-Jood’s Research Group at UVA for Fall 2026

PhD Position 1: Computational Methods for Socio-Environmental Systems. This position focuses on developing and applying novel computational frameworks for modeling human decision-making and collective behavior in complex socio-environmental systems. The research sits at the intersection of agent-based modeling, graph learning, large language models, and quantum cognition, drawing on these methods selectively to address problems where classical approaches fall short. Application domains include wildfire hardening and non-uniform incentive design, evacuation and warning response, rural early warning under infrastructure failure, cascading hazard impacts, and climate adaptation planning under deep uncertainty. Strong candidates will have interests and some background in one or more of the following: computer science, applied mathematics, systems engineering, computational social science, or environmental and water resources systems.

PhD Position 2: Understanding Decision-Making Under Risk. This position focuses on understanding the triggers, thresholds, and drivers that shape how individuals and communities make decisions under risk. Specifically, the research examines how environmental, experiential, and social factors interact to move households toward protective action. The work combines primary data collection, including surveys and decision experiments, with observational data and modeling to understand adaptation behavior across coastal and riverine settings, with the broader goal of developing a virtual lab for studying decision-making under environmental risk. Strong candidates will have interests and some background in environmental and water resources systems, quantitative social science methods such as survey design or choice experiments, or applied statistical analysis, along with interest in human decision-making, risk, and policy.

PhD Position 3: Valuing and Improving Early Warning for Compound Hazards. This position focuses on assessing and improving the value of early warning systems for compound natural hazards. The research quantifies the downstream socioeconomic consequences of cascading disruptions to lifeline systems, including transportation, energy, schools, and essential services, and integrates these into a framework for valuing the benefits of early warning and information. Strong candidates will have interests and some background in environmental and water resources systems, economics or nonmarket valuation, hazard impact analysis, with interest in connecting these to policy.

How to Apply (PhD Positions): If you are interested in one of the PhD positions, please send me an email at ms2dm@virginia.edu with the subject line “Prospective PhD Student – Position [#] – [Your Last Name]”, replacing [#] with the position number and [Your Last Name] with your last name. Please attach your CV and unofficial transcripts and include a brief statement in your email describing your research interests and why you believe you are a good fit for the position. I will follow up with candidates whose background and interests align well with these positions.

For more information about the admissions process and requirements, please visit UVA School of Engineering Graduate Admissions at <https://engineering.virginia.edu/graduate-study/future-grad-students/graduate-admission>, and the Department of Civil and Environmental Engineering’s Information for Prospective Graduate Students at <https://engineering.virginia.edu/departments/civil-and-environmental-engineering/apply-cee/apply-cee-today>.