Position Openings: Computational Biomedicine Lab

Computational Biomedicine Lab at the University of Houston is looking for undergraduate research students to work as part of the NSF-funded project “Community Responsive Algorithms for Social Accountability (CRASA).” The parent project aims to analyze methods to balance societal needs for accountability, current legal standards, and practical issues of algorithm auditing. The position entails innovative research and/or applications related to fairness, explainability, robustness, privacy, security, and other aspects of AI Accountability.

More details about the CRASA project can be found at [https://uh-crasa.org](https://uh-crasa.org)

If you are interested, please send an email to ioannisk@uh.edu with the subject line “CRASA UG: [YourLastName].” Please include a resume and a cover letter indicating why you are interested in your email.

The descriptions for the currently available three projects are below. Additional projects may be available.

**Project 1 – Simulating the Systemic Effects of the Policy Algorithms in Criminal Justice and Law Enforcement:** Algorithms play an expanding role in public policy decisions in many areas, including criminal justice and law enforcement. This project aims to explore the systemic effects that various criminal justice and/or proactive policing decision support algorithms cause in society using social simulation methods (i.e., agent-based modeling and system dynamics).

**Project 2 – Empirical Evaluation of the Perceived Tradeoff between Fairness/Explainability and Accuracy:** Algorithms play an expanding role in public policy decisions in criminal justice, allocation of public resources, public education, and even national defense strategy. However, standards of accountability reflecting current legal obligations and societal concerns have lagged in their extensive use and influence. Many approaches to ensure fairness and explainability require a tradeoff with overall accuracy. This project aims to characterize the (potential) decrease in accuracy when fairer, more accountable, or more explainable models (i.e., usually simpler models such as linear models or simple decision trees) are employed or when input data or model outputs are refined to eliminate demographic discrepancies.

**Project 3 – Analysis of Policy Documents on Accountable AI:** Various governments, nonprofits, and companies have begun to develop and publish policy documents, legal documents, and other guidelines related to AI Accountability, Responsible AI, Trustworthy AI, or AI Ethics. This project aims to analyze such documents (or a carefully selected subset of them) to identify similarities, differences, strengths, weaknesses, or other characteristics. The goal is to inform the general public, policymakers, and researchers and subsequently enhance the discussion around these documents.