

Postdoc and PhD Positions at Emory and Tulane in the IARPA HAYSTAC Program

We have multiple immediate open postdoc and PhD positions at Emory University (directed by Dr. Andreas Züfle) and at Tulane University (directed by Dr. Carola Wenk).

These positions will be part of a multi-institutional and multi-disciplinary team in the IARPA Hidden Activity Signal and Trajectory Anomaly Characterization (HAYSTAC) program. [HAYSTAC](#) aims to establish models of “normal” human movement across times, locations, and people in order to characterize what makes an activity detectable as anomalous within the expanding corpus of global human trajectory data.

We are seeking motivated postdocs and PhD students for two specific research areas.

Research Area 1: Massive Microsimulation. This research area requires the development and refinement of a scalable agent-based simulation framework for urban areas. Using an existing simulation framework (written in Java), new agent logic will have to be implemented to create agents that use socially plausible rules for mobility and interaction with other agents. A main goal is computational efficiency to scale the simulation to millions of agents that concurrently make decisions, find their way between places, and interact with their simulated world. Preferred qualifications for this area include strong programming skills in Java, skills in developing efficient algorithms, and a publication record that demonstrates the ability to work well with interdisciplinary research teams. We’re looking to hire one postdoctoral scholar and one PhD student for this research area.

Research Area 2: Trajectory Modeling and Mining. This research area consists of analyzing massive sets of movement trajectory data to 1) understand and model normal trajectories in a given urban region, 2) generate artificial trajectories that appear similar to normal trajectories, and 3) detect anomalous trajectories. To handle massive (Petabyte-scale) trajectory data, preferred qualifications for this area include large-scale data management, trajectory data analysis, trajectory clustering, anomaly detection, generative modeling, and a publication record that demonstrates the ability to work well with interdisciplinary research teams. We’re looking to hire one postdoctoral scholar and one PhD student for this research area.

The successful candidates will supervise and collaborate with graduate and undergraduate research assistants, collaborate with fellow scholars, and disseminate their work through publications and presentations.

Postdoctoral positions will ideally start as soon as possible but the start date is flexible. These positions are initially for one year with an option for extension, subject to availability of funding. PhD positions start in 2024, typically in the fall semester. For more information please email Andreas Züfle at Emory (azufle@emory.edu) and Carola Wenk at Tulane (cwenk@tulane.edu).

Application instructions:

- Postdoc, Emory: [Apply here](#) and email Andreas Züfle (azufle@emory.edu)
- Postdoc, Tulane: [Apply here](#) and email Carola Wenk (cwenk@tulane.edu)
- PhD student, Emory: [Apply](#) for the PhD program in Computer Science and Informatics and email Andreas Züfle (azufle@emory.edu)
- PhD student, Tulane: [Apply](#) for the PhD program in Computer Science and email Carola Wenk (cwenk@tulane.edu).

Equal Employment Opportunity Statements

Tulane University has officially adopted a mandatory COVID-19 vaccination policy. All employees and visiting faculty must be fully vaccinated with a COVID-19 vaccination or obtain approval for a medical or religious exemption prior to beginning employment. Tulane University is located in New Orleans - a city with tremendous history of diverse cultures, community, and languages. Tulane is actively building a campus culture grounded in our values of EDI and anti-racism. We seek and welcome candidate applications from historically underrepresented groups, such as BIPOC (Black, Indigenous, People of Color), women, LGBTQ, those living with disabilities, and veterans. Tulane University is an Equal Employment Opportunity/Affirmative Action institution committed to excellence through diversity and creating a community and culture that fosters a sense of belonging for all. We are a recognized employer and educator valuing AA/EEO and will not discriminate based upon race, ethnicity, color, sex, religion, national origin, age, disability, genetic information, sexual orientation, gender identity or expression, pregnancy, marital status, or any other status or classification protected by federal, state, or local law. It is important to us to intentionally seek candidates who are committed to fostering equity, diversity, and inclusion in support of Tulane's Strategy for Tomorrow and encourage all qualified candidates to apply.

Emory University is an equal employment opportunity and affirmative action employer. Women, minorities, people with disabilities, and veterans are strongly encouraged to apply. Emory University is a leading research university that fosters excellence and attracts world-class talent to innovate today and prepare leaders for the future. We welcome candidates who can contribute to the diversity and excellence of our academic community. Emory University is an equal opportunity/equal access/affirmative action employer fully committed to achieving a diverse workforce and complies with all Federal and Georgia State laws, regulations, and executive orders regarding non-discrimination and affirmative action. Emory University does not discriminate on the basis of race, age, color, religion, national origin or ancestry, sex, gender, disability, veteran status, genetic information, sexual orientation, or gender identity or expression. Students, faculty, and staff are assured of participation in University programs and in use of facilities without such discrimination. The University also complies with all applicable federal and Georgia statutes and regulations prohibiting unlawful discrimination. All members of the student body, faculty, and staff are expected to assist in making this policy valid in fact. Any inquiries regarding this policy should be directed to the Emory University Office of Equity and Inclusion, 201 Dowman Drive, Administration Bldg., Suite 305, Atlanta, GA 30322. Telephone 404/727-9867 (V) 404/712-2049 (TDD).