

Faculty Name:

Marco Giometto

Faculty Email:

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Lab:

Environmental Flow Physics Laboratory

Project Title:

Fluid flow visualization in virtual reality

Description:

The objective of this project is to generate a virtual reality environment where high-fidelity surface data from airborne light detection and ranging (LiDAR) measurements of the Columbia Morningside Campus are combined with results from computational fluid dynamics (CFD) simulations of airflow, temperature and humidity transport. The student will learn fluid dynamics visualization techniques and research will be conducted to determine how to best integrate these in virtual reality environments. The project is supported by and in collaboration with the Columbia Emerging Technologies Consortium (<https://etc.cuit.columbia.edu/content/hp-campus-future-emerging-technology-grant-research-projects>). Leading-edge hardware will be made available to the student as part of this study (1x Varjo XR-3 headset, a GPU server, LiDAR surface data, CFD data). Preference will be given to students that can commit for the full Spring and Summer periods.

Location of Research:

On-Site

of hrs/week:

9

Department/Program:

Civil Engineering and Engineering Mechanics

Eligibility:

BS, Fourth Year, MS

To apply, please contact:

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