Research Student- GIS

Internal Job ID: 2025-05

GEMINI (www.geminimedicine.ca) is a unique big data platform in the Canadian healthcare landscape using advanced methods and analytics to extract and standardize data captured in hospital electronic health records. We are based out of Unity Health Toronto, St. Michael's Hospital and currently exist at 30+ hospitals in Ontario. GEMINI is a collaborative data and analytics platform for all Ontario hospitals to accelerate research and quality improvement, leading to excellent hospital care.

Position Overview:
GEMINI is looking for a research student to help harness the power of spatial data using GIS (geographic information system) in the context of healthcare research. The hired student will link publically available spatial data (e.g., dissemination areas from Statistics Canada) to GEMINI data. The goal of the project is to provide insights into GEMINI's data coverage by visualizing hospital catchment areas, and to derive new patient-level spatial indicators (such as travel distance of patients to hospitals). The project will also involve some exploratory analyses to demonstrate how spatial information can be leveraged in future research projects.

The hired student will be a part of Unity Health's [Keenan Research Summer Student Program](), and expected salary range is $17.56 - $21.95 per hour.

Key Responsibilities:
- Learn about GEMINI data and how spatial data can be leveraged in healthcare research
- Use R/Python to link publicly available spatial data (e.g., from Statistics Canada) to the GEMINI database
- Create spatial illustrations (e.g., maps visualizing catchment areas for different hospitals) using R/Python or open-source GIS tools
- Derive patient-level location information (e.g., travel distance to hospitals based on dissemination area)
- Perform exploratory, descriptive analyses (e.g., identifying underserved neighbourhoods, analyzing average travel distance of patients at a given hospital etc.)
- Create documentation of data linkage and summary of relevant variables for other researchers
- Attend regular meetings with supervisor and other summer students to present the project and communicate progress

Qualifications:
- Current undergraduate student
- Basic coding skills in R (or Python) to perform simple data manipulation & transformation (e.g., merging tables, applying filters etc.)
- Basic knowledge in GIS/spatial analysis, or demonstrated willingness to learn
- Experience with data visualization, or is preferred but not required
- Strong interest in both socioeconomic and healthcare research
- A curious mind and a strong drive to learn

- Eligible to work in Ontario, Canada (e.g. Canadian citizenship, permanent resident, study permit, etc.)

Time Commitment:
Full time contract (37.5 hours per week) for at least 10 weeks from May to August 2025. Student will be expected to work in a hybrid environment with the ability to come into GEMINI's office (located at Li Ka Shing Knowledge Institute, Downtown Toronto) at least once a week.

How to Apply:
Please submit your CV/resume and a quick paragraph on your interest in GEMINI (around 100 words) to gemini.data@unityhealth.to with your subject header "**<Your Name> Application for Position 2025-05".**