PHD scholarships available: University of Melbourne, the Australian National University in Canberra, Australia.

Your PhD research will contribute to a project at the forefront of fundamental AI and spatial information research: Making computers understand common language about place. This project, funded by the Australian Research Council (2017-2019), will deliver the computational methods to capture, model, process, and interact on human place knowledge, which conceptualizes places and their relations, instead of using coordinates and maps. The outcomes will enable human-machine interaction that is capable of responding to human intuition.

The project engages in research in artificial intelligence, language technologies, and spatial information science – you will work in an interdisciplinary environment. The project is also geographically spread between The University of Melbourne, the Australian National University in Canberra, and the University of California, Santa Barbara. The scholarships, however, are allocated to the two Australian universities, which are Australia's leading research universities.

We seek applicants covering one of the following tasks:

1. Capture (Melbourne: led by Tim Baldwin). This task addresses the extraction of place knowledge in conversational context from large-scale text corpora such as social media and web sources, or crowd-sourced from mobile apps.

2. Modelling (Melbourne: led by Stephan Winter). This task addresses the representation of extracted place knowledge in place graphs, especially the representation of context with places and their relationships.

3. Reasoning (Canberra: led by Jochen Renz). This task addresses context-sensitive spatial reasoning beyond maintaining a locally consistent database. We expect to make progress on this long avoided challenge by considering the spatial context derived from the integration of place knowledge and maps.

4. User Interaction (Melbourne: led by Martin Tomko). This task addresses the user interaction with a place graph, enabling users to query or modify stored data by developing methods answering user queries taking into account the context of the querying user.

Selection Criteria

* Masters or Honours Degree in Computer Science, Geodesy/Geomatics/Geoinformatics, or another relevant discipline;

* A weighted average mark at least satisfying the entry requirements of the PhD programs at the respective universities;

* Demonstrated ability to perform independent research (e.g., by a research component in the master degree);

* Excellent written and verbal communication skills to technical and non-technical audiences (e.g., demonstrated in the written application and interview);

* Software development skills;

* Ability to work in (at least one of) spatial data handling and analysis, database systems, machine learning, natural language understanding, and artificial intelligence;

* Ability to work co-operatively in a multi-disciplinary environment and team.

Benefits

Scholarships are for three years, with the expectation to complete a PhD in this time-frame. The universities have excellent environments and frameworks to support PhD research. Also, successful candidates will be provided a tuition fee waiver. Scholarships are sufficient to cover living costs in Melbourne or Canberra. The project also provides funds for conference travels commensurate with opportunity.

How to apply

Send your letter of application (addressing the selection criteria, and identifying the particular task of interest), a CV, and a transcript of your last degree per email to the project leader, Prof Stephan Winter (winter@unimelb.edu.au).

The application deadline is 20 March 2017, for a start later in 2017. Selection is pending admission at the respective university and visa processes.