

Posting Date: 23 September 2019

Department of Physics/Faculty of Arts & Science
University of Toronto
JOB POSTING – POSTDOCTORAL FELLOW

Area of Research: Ocean Remote Sensing/Computer vision

Description of duties: We are seeking to hire a post-doctoral fellow, who either has expertise in physical oceanography and is willing to learn about modern computer vision methods, or vice-versa. Modern physical oceanography relies heavily on satellite imagery. The future SWOT (Surface Water Ocean Topography) satellite altimeter (<https://www.aviso.altimetry.fr/swot/>) will measure ocean dynamics at an unprecedented resolution. Our community hopes that this new mission will trigger a giant leap in our fundamental understanding of the ocean, with impacts ranging from improving climate modelling to improving fisheries and coast guard operations.

This technological advance comes with unprecedented challenges from both theoretical and technical points of view. Of particular importance for SWOT is the issue of disentangling different dynamical processes (e.g., waves, eddies) whose signatures superpose in the expected data. Our group is currently investigating the possibility to adapt modern deep-learning-based computer vision methods to satellite images (further detail provided upon request). We expect the successful candidate to mine several datasets available online and locally in Toronto and to adapt an algorithm, initially developed for medical imaging applications, to the specific needs of satellite oceanography.

The successful candidate will complement and have the opportunity to collaborate with the Department's vibrant Earth, Atmospheric and Planetary Physics group (<https://www.physics.utoronto.ca/research/eapp>), which we are a part of. The research setting at the University of Toronto is further enriched by the existence of the University-wide Centre for Global Change Science, the School of the Environment, the Vector Institute for Artificial Intelligence (<https://vectorinstitute.ai>), a vibrant private sector dedicated to improving current machine learning techniques, and numerous initiatives to foster public-private partnerships. Computational facilities include SciNet, the most powerful university-based advanced research computing facility in Canada. For more information about the Department of Physics, please visit us at <http://www.physics.utoronto.ca/>.

Please contact Nicolas Grisouard (nicolas.grisouard@utoronto.ca) for further detail.

Salary: CA\$50,000/year.

Term: 18 months secured to date.

Supervisor: Nicolas Grisouard.

Expected start date: Whenever possible, available immediately.

Required qualifications: Ph.D. in physical oceanography, in computer science, or in another relevant field.

Application instructions

All individuals interested in this position must submit a cover letter, a current curriculum vitae that includes a current list of publications and presentations, the contact information of at least two people willing to write a letter of recommendation, and any additional documentation that the applicant deems relevant, to Nicolas Grisouard (nicolas.grisouard@utoronto.ca) with the subject line: *Post-Doctoral Fellow: SWOT*, by the closing date or until the position is filled.

Closing date: 15 November 2019. Applicants should endeavour to have all documentation submitted by this date, but we will accept applications until the position is filled.

FTE: The normal hours of work are 40 hours per week for a full-time postdoctoral fellow (pro-rated for those holding a partial appointment). Recognizing that the needs of the employee's research and training and the needs of the supervisor's research program may require flexibility in the performance of the employee's duties and hours of work.

Employment as a Postdoctoral Fellow at the University of Toronto is covered by the terms of the CUPE 3902 Unit 5 Collective Agreement.

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The University of Toronto is strongly committed to diversity within its community and especially welcomes applications from racialized persons / persons of colour, women, Indigenous / Aboriginal People of North America, persons with disabilities, LGBTQ persons, and others who may contribute to the further diversification of ideas.