York University-Teledyne Optech AI
Post-Doctoral Fellowship in Deep Learning for Computer Vision

Dr. Gunho Sohn's Laboratory
Dept. Earth and Space Science and Engineering, Lassonde School of Engineering
York University, Toronto, ON M3J 1P3, Canada

Position Description

- **Area: Deep Learning for Computer Vision**
- **Duration: 2 years (PDF)**
- **Starting Date: Dec 1st, 2020**
- **Salary: $70,000 - $90,000 plus York Standard Benefits Package**

Dr. Gunho Sohn's Lab (www.yorku.ca/~gsohn) in the Department of Earth and Space Science and Engineering at York University in Toronto is opening a Postdoctoral Fellowship to work on the development of deep learning methods for computer vision and SLAM. The successful candidates will work on an exciting project to develop an innovative pipeline for 3D semantic mapping and SLAM using mobile lidar point clouds and images. This is a collaborative project with Teledyne Optec in Toronto (https://www.teledyneoptech.com/en/home/), the world leader in the development and manufacture of advanced fully-integrated lidar and camera solutions in ground-based, airborne and spaceborne mapping systems.

The application of deep learning to automatic generation of 3D semantic maps using the sheer amount of mobile mapping data is a rapidly growing area of research and the successful applicant will be expected to develop novel techniques to address the unique challenges posed by image understanding and mapping in complex urban environments. Applicants should have a strong interest in deep learning in general, and in one or more of the following areas: graph convolutional network, weekly supervised/unsupervised learning, integration of multimodality data, interpretable machine learning, multitask learning, multiple instance learning, semantic segmentation learning, SLAM using multi-modal imaging systems and IMU.

Required Qualifications

- Doctorate in a relevant discipline obtained within the last five years.
- Proven publication record in computer vision and machine learning.
- Programming experience in Python and/or C++.
- Experience with one or more of TensorFlow, PyTorch and Keras is an advantage.
- Excellent English communication skills, both written and oral.

A preferred candidate has deep learning research experience with semantic and object detection using lidar point clouds. The candidate must hold a Canadian working permit or Canadian permanent residentship or Canadian citizenship.

Research Environment: Dr. Sohn's lab is located in Lassonde School of Engineering at York University **(**https://lassonde.yorku.ca/**)** and Centre for Research in Earth and Space Science (CRESS) (http://cress.info.yorku.ca/). Research interests include the development of 3D primitive-based urban modeling and augmentation, autonomous mapping and navigation and digital infrastructure modeling. The postdoctoral fellow will be working with faculty and graduate students in several research programs led by York University:

- NSERC CREATE Data Analytics & Visualization (https://www.createdav.com/welcome/)
- Intelligent Systems for Sustainable Urban Mobility (http://issum.yorku.ca/)
- Advanced Disaster, Emergency and Rapid Response Simulation (http://adersim.info.yorku.ca/)
- Vision: Science to Application (http://vista.info.yorku.ca/)

To Apply
Please submit a brief statement of research interests, a curriculum vitae and a list of publications and contact information for 2-3 references (not letters required at this stage) to gsohn@yorku.ca. The application will be close on **November 15th, 2020**.

Information about Dr. Sohn's lab at York University can be found at www.yorku.ca/~gsohn. In accordance with Canadian Employment and Immigration guidelines, applicants must be eligible to work in Canada.