Leibniz-Rechenzentrum
der Bayerischen Akademie der Wissenschaften

PhD Candidate in Deep Learning

About us
The TUM-Professorship for Signal Processing in Earth Observation develops innovative methods for information extraction from remote sensing data in close cooperation with the Department EO Data Science of the Remote Sensing Technology Institute of the German Aerospace Center (DLR).

The Leibniz Supercomputing Centre (LRZ) of the Bavarian Academy of Sciences and Humanities is one of the leading supercomputing centres in Europe. Among its many computational resources, LRZ operates SuperMUC-NG, currently the fastest European supercomputer, and two DGX-1 deep learning supercomputers.

AutoML is among the hottest research topics in AI, having already outperformed machine learning experts in finding better hyperparameters for certain ML algorithms. The German Federal Ministry of Education and Research (BMBF) has recently funded a Deep Topology Learning (DeToL) project (detol.de). Parallel to that, in the framework of an ERC project (www.so2sat.eu), global urban mapping using Earth observation satellite data can serve as a great use case for deep topology learning. As a joint project between TUM-SiPEO and LRZ, we are looking for a PhD candidate on automatic deep topology learning. The successful candidate will be able to work on the most advanced Earth Observation data with AutoML at HPC scale.

Tasks
Your duties will be comprised of:
- developing algorithms for deep topology learning with application to remote sensing problems
- exploring the uncharted territory of automatic deep topology learning on cutting edge HPC systems
- acting as a connecting link between LRZ and TUM-SiPEO

Requirements
Promising applicants have a sound academic education in mathematics, physics, or computer science. In detail, we expect:
- Scientific curiosity
- Strong interest in AI technology
- Excellent Mathematical knowledge
- Excellent programming skills, ability to read a DL paper, implement it and get it to work.
- Experience in working with client-server environments as well as CPU/GPU clusters
- Excellent communication skills and good team player
- Solid command of the English language both in written and spoken form (German language is a plus)

What we offer
This unique position is jointly financed by TUM and LRZ. We offer the possibility to join: 1) a successful research group with outstanding international reputation (see www.sipeo.bgu.tum.de); 2) a leading supercomputer center (www.lrz.de). 3) a dynamic working group with experts in AutoML, Computer vision and HPC from University of Freiburg, University of Mannheim, and Fraunhofer Institute for Industrial Mathematics.

TUM and LRZ want to increase the number of female employees, i.e. qualified female candidates are explicitly encouraged to apply for this position. Severely disabled candidates will be preferred if they are essentially similarly qualified and suitable for the position. The position is limited up to 3 years with a possibility to be extended for one more year and paid at TV-L E13 scale.

Application materials:

- CV
- Full set of transcripts
- Motivation letter
- At least 2 references. For each reference, please include name, title, and email address. References should expect to be contacted for a reference letter.

Please send the application to m.schmitt@tum.de and bewerbungen@lrz.de (with the subject: DeToL Application) by 30.11.2018

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