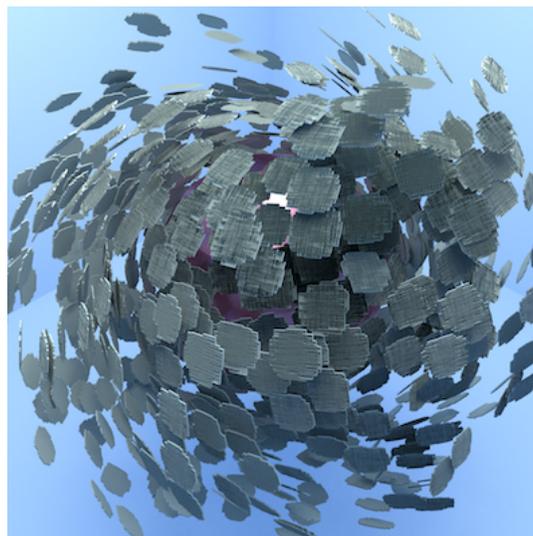


Research assistant for intelligent electron microscopy

Job description

A new generation of detectors are rapidly changing atomic resolution imaging. These detectors allow probabilistic imaging of very many noisy, incomplete, chance observations that are then statistically classified and interpreted. This probabilistic mode of imaging has the potential for unprecedented imaging of highly dynamic and disordered systems.

The **Centre for Bio-imaging Sciences at the National University of Singapore** is one of the few places in the world that develops novel approaches in such probabilistic microscopy. An enabling factor here is artificial intelligence and machine learning. We are looking for motivated, aspiring scientists who would like to join us in developing the emergent field artificial intelligence for electron microscopy. Together you will work with a multi-disciplinary team of data scientists tackling challenging questions in imaging, artificial intelligence, and order-disorder transitions.



Candidates are expected to learn/implement:

- scalable data reduction/compression frameworks for high-throughput imaging;
- human-algorithm interface for supervised machine learning of electron micrographs;
- computer vision and statistical algorithms for electron microscopy;
- deep learning architectures for artificial visual intelligence networks, plus machine learning algorithms (e.g. Naive Bayes, simple clustering, factor analyses, etc) for high resolution robust imaging.

Application requirements

- Bachelor's/Master's degree in Physics, Computer Science, Applied Math, Statistics, and/or Electrical Engineering.
- Extensive programming/optimization experience in Python, C/C++.
- Able to do independent research, and can also work constructively with other researchers.
- Organized and pays attention to details. Email us one typo in this advertisement.
- Strong mathematical foundation: calculus, probability and statistics, and linear algebra.
- Strong ability to communicate in English. Can learn and work independently, and also in a team.

Advantageous to have

- Extensive experience programming in the Unix environment, running large batch jobs on CPU/GPU clusters.
- Practical experience programming user interfaces, CUDA, Keras, Tensorflow (or equivalent), and applying techniques in data science (e.g. clustering, inference, decision trees, neural networks).

Contact and additional details

Interested candidates should email the following to **Dr. Duane LOH** at duaneloh@nus.edu.sg:

- complete resume (including a full publication list, if applicable),
- any listing of a public code repository (e.g. GitHub, bitbucket).

This position is expected to start in April-August 2018. Job benefits are competitive with young aspiring scientists in Singapore. Shortlisted candidates will be contacted for interviews.