**Tiger Cluster Application**

Daway Chou-Ren

* **Which system or systems you need to use**  
  Tiger
* **A list of researchers who will need accounts**  
  Daway Chou-Ren, dchouren@cs.princeton.edu
* **The faculty member(s) who is sponsoring the project**  
  Szymon Rusinkiewicz, smr@cs.princeton.edu
* **The scientific background for your project including scientific merit of the proposed work**  
  This project will apply deep learning techniques to build a spatial/temporal map of land-use in urban environments. We will label image locations, detect human sentiment within these images, and classify locations based on associated human emotions. These classifications will be semi-supervised, and we will explore different manual tuning parameters for optimal classification.
* **The programming approach for your project:**
  + **Programming language**  
    Bash, Python
  + **Parallelization mechanism (MPI or OpenMP)**  
    MPI
  + **Required libraries**  
    Caffe, OpenCV, Theano, Torch
* **The resource requirements for your project:**
  + Number of concurrent cpus: 128 cpus and **1 GPU**
  + Total cpu time: 50,000 hours
  + RAM per task: 128 GB
  + Total disk space: 1 TB
* **A few references or citations**
* Zhou, Bolei, et al. "Learning deep features for scene recognition using places database." *Advances in neural information processing systems*. 2014.
* Castelluccio, Marco, et al. "Land use classification in remote sensing images by convolutional neural networks." *arXiv preprint arXiv:1508.00092* (2015).