Contact: Dr. Abbas Rahimi
Email: abr@Zurich.ibm.com

The thesis will be performed at the IBM Research-Zurich in Rüschlikon.

Master Projects
Face Recognition at Scale

Introduction

Unlike the image classification tasks, face recognition is a challenging recognition problem, where the testing categories (identities) are generally different from those used in training. To handle this challenge, most deep learning based face recognition approaches utilize convolutional neural networks to extract feature representations from facial images, and adopt a metric (usually the cosine distance) to estimate the similarities between pairs of faces during inference. However, they have shown successes with limited scale problems: from 2k-way classification up to 20k-way classification [1].

Goal

We aim at developing face recognition models that can robustly scale to million-way problems, and to facilitate retrieving the other related information for the recognized face.

Tasks and Type

There are several challenges that need to be overcome mainly at algorithmic level to realize such scalable face recognition system including developing novel methods using memory-augmented neural networks [2]. We are inviting applications from students to conduct their Master's thesis work on this exciting new topic. The work performed could span high-level algorithmic developments all the way to efficient realization on massively parallel hardware platforms. It also involves interactions with several researchers across IBM research focusing on various aspects of the project. The ideal candidate should have a multi-disciplinary background, strong mathematical aptitude and programming skills. Prior knowledge on machine learning and AI is a bonus but not necessary.