Chen Liu

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Education

- **École polytechnique fédérale de Lausanne(EPFL)** — **Lausanne,Switzerland**
  M.S in Computer Science — *2015-Present*
  GPA: 5.76/6.00 (Until Now) Transcript
- **Tsinghua University** — **Beijing,China**
  B.ENG in Computer Science and Technology — *2011-2015*
  GPA: 91.34/100.00 Rank 9/123 Transcript Graduated with Distinction

Research & Work Experiences

Research Interests

Machine Learning, Artificial Neural Networks, Convex Optimization, Natural Language Processing.

Main Projects

- **Optimization methods for Neural Networks by Non-Euclidean Geometry** — **Jan,2015–Present**
  Supervised by Prof. Volkan Cevher, EPFL — *Master-Level Semester Project*
  - Most optimization methods we used in neural network are based on first-order or second-order gradient in Euclidean Geometry. In this project, we propose a novel optimization method based on Non-Euclidean Geometry. To more detail, it is based on ∞-norm instead of 2-norm. We will apply this method in different neural network models.
- **Recurrent Convolutional Neural Network for Semantic Classification** — **Dec,2014–June,2015**
  Supervised by Prof. Xiaolin Hu, Tsinghua University — *Bachelor Thesis*
  - Our model, called recurrent convolutional neural network, is constructed by adding recurrent connections in convolutional neural network. Recurrent connections helps the model extract and mix hierarchical features in a single layer. Similar models have achieved success in the task of image classification. This project is to apply this idea to implement a semantic classifier. Unlike image, the feature of natural languages are 'linear'. As a result, 1-D convolution instead of 2-D convolution are used implementation.
- **Class-Based Summarization of Multi-Language Microblogs** — **Mar,2014–July,2014**
  Supervised by Prof. Hua Xu, Tsinghua University — *Bachelor Research Intern*
  - This project aims to generate a summary of millions of microblogs regarding a given topic automatically. In the first step, it first runs topic model and word2vec algorithm to cluster all words in the corpus. Then it uses a tree pattern reinforcement algorithm to generate summary.
- Smaller Projects, including deep learning, graphics, software engineering and hardware design, can be found HERE.

Technical and Personal skills

- Programming Language: C/C++, Python(skilled); Matlab, Java(Average); Scala, Golang(Beginner).
- Industry Software Skills: Parallel Computing (MPI, OpenMP etc.); Git, SVN; Website Construction (HTML, Javascript); Linux; Popular Deep Learning Tools (Theano etc.); Hardware Design(VHDL).
- Natural Language: Mandarin Chinese(Native), English(Fluent).

Awards

- Outstanding Graduates of Department of Computer Science and Technology in Tsinghua University.
- Scholarship of Academic Excellence in Tsinghua University.(2013 & 2014)
- Scholarship of Social Work in Tsinghua University.(2013)
- Second Prize of 'Caring for Girls' National Voluntary Work.
- First Prize of Physics Competition for College Students in Beijing.

External Links

- HomePage: Smaller Projects & Major Courses. http://liuchen1993.cn/HomePage/home.html
- Github: Codes. https://github.com/liuchen11