

Chen Liu

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Education

- **École polytechnique fédérale de Lausanne(EPFL)** **Lausanne, Switzerland**
M.S in Computer Science *2015–Present*
GPA: 5.72/6.00 (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.

Internship.....

- **Siemens Research (USA)** **Jul, 2016–Feb, 2017(Expected)**
Princeton, New Jersey, USA *Research Intern*
 - The main project of this intern is to apply machine learning algorithms, including deep neural networks, to automatically tune the parameters to render the medical image data. It should be scalable for different parts of the body, different people and different medical purposes.

Main Projects.....

- **Optimization methods for Neural Networks by Non-Euclidean Geometry** **Jan, 2016–Present**
Supervised by [Prof. Volkan Cevher, EPFL](#) *Master 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 geometry instead of 2-norm geometry. We have applied it to recurrent neural networks and such an optimizer significantly outperforms traditional SGD. ([More Info](#))
- **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. ([More Info](#))
- 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, Lua(Beginner).
- Industry Software Skills: Parallel Computing (MPI, OpenMP etc.); Git, SVN; Website Construction (HTML, Javascript); Linux; Popular Deep Learning Tools (Theano, Torch, Caffe 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)

External Links

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