## Qian Liu (Charles Liu)

Master at *EE, Tsinghua* ch Haidian District, Beijing

**SKILLS & CERTIFICATES** 

Jun. 2016 – Aug. 2016

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EDUCATION	
Aug. 2014 – Jul. 2018	Major in Electronic Engineering in Tsinghua University
	• Theoretical Basis:
	Digital Image Processing, Statistical Signal Processing, Media
	and Cognition, Stochastic Process(91/100), Database (96/100),
	MATLAB Application(97/100)
	• Scholarship:
	<ul> <li>National Encouragement Scholarship</li> </ul>
	<ul> <li>Scholarship for Academic Progress</li> </ul>
	<ul> <li>Outstanding Volunteer Scholarship</li> </ul>
Aug. 2016 – Jul. 2018	Minor in Statistics in Tsinghua University
	• Theoretical Basis:
	Probability Theory, Machine Learning & Data Mining, Statistical
	Inference, Applied Linear Regression
Aug. 2018 – July. 2020(Exp.)	Master in Electronic Engineering
	• Theoretical Basis:
	Optimization Method, Computing Linguistics, Speech Processing

Programming	C++, R, MATLAB, Python, SQL, Verilog, Git
English	CET-6: 556 CET-6: 604 TEPT: 96.75/120
RESEARCH EXPERIENCES	
Oct. 2018 – Mar. 2018	Improving Language Models for Speech Recognition Python/Shell
	<ul> <li>Vocabulary expansion, lexicon generation, data selection and other methods are adopted for improving language models in speech recognition. Meanwhile, pre-training methods for word vectors are used to improve RNN/LSTM language models. The methods improve speech recognition performance by 5-8% relatively reduction on WER (Word Error Rate).</li> </ul>
Mar. 2017 – Aug. 2017	Mobile Big Data Mining based on Deep Learning Python
S	Build a Spatial-Temporary RNN model based on Tensorflow
	platform to process the trajectory data from both time and space
	dimension, trying to find the pattern of users' behavior and predict
	where the users would be in the future.
Mar. 2017 – May 2017	Continuous Chinese Speech Recognition Python
	• The project is mainly based on Kaldi. The monophone and triphone models are trained by thschs30 dataset. After the models trained, a concise and friendly GUI is developed using PyQt. It can be used both online and offline.
Jan. 2017 – Feb. 2017	Data Analysis and Exploration of Bay Area Shared Bicycle R
	• Use Machine Learning algorithms, including linear regression and

**Speech Synthesis and Image Processing** 

histogram model.

LASSO regression, to analyze the data, and reveal the hidden

Analyze speech signals and make linear predication. Implement JPEG algorithm, compared the results of information hiding in both spatial and DCT domain. Face detection based on RGB color

**MATLAB** 

patterns. Besides, a shiny app was designed using R Shiny.