

# Chang Liu

SOFTWARE DEVELOPMENT ENGINEER

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"Perfection is finally attained not when there is no longer more to add, but when there is no longer anything to take away."

## Education

### KTH Royal Institute of Technology (KTH) | EIT Digital

Stockholm, Sweden

M.SC. MAJOR: EMBEDDED SYSTEMS, MINOR: INNOVATION & ENTREPRENEURSHIP. GPA: 8.7/10.0

2015 - 2016

- Machine Learning, Data Analysis, Software Development, Internet of Things, ASIC Design and FPGA, System Modeling.

### Eindhoven University of Technology (TU/e) | EIT Digital

Eindhoven, The Netherlands

M.SC. MAJOR: EMBEDDED SYSTEMS, MINOR: INNOVATION & ENTREPRENEURSHIP. GPA: 7.8/10.0

2014 - 2015

- Computer Architecture, Embedded Software and Hardware, Multiprocessors, Network-on-Chip, Wireless Networks.

### University of Electronic Science and Technology of China (UESTC)

Chengdu, China

B.ENG., ELECTRONICS AND COMPUTER SCIENCE RELATED SUBJECTS. OVERALL GPA: 88%

2010 - 2014

- Excellent Graduation Thesis.

## Competences

<b>Programming</b>	Python, Java, C, C++, Shell, Scala, SQL, JavaScript, Node.js (Express.js), HTML, CUDA
<b>Skills</b>	Linux, Docker, Database (Oracle, Cassandra), REST API, Polymer, Elasticsearch, Logstash, Kibana, Git, LaTeX
<b>Languages</b>	English (Full professional proficiency), Chinese (Native), Dutch (Elementary)
<b>Personality</b>	Team-player, Proactive, Motivated, Ambitious, Open-minded, Curious, Adaptive, Responsible

## Experience

### WORKS

#### ING - International Netherlands Group

Amsterdam, The Netherlands

IT SPECIALIST

Sep. 2016 - PRESENT

- IT Graduate Program. Agile Software Development. Scrum Team and DevOps.
- Rotation 1: Data analysis with Cyber Fraud Prevention Team for Wholesale Banking. Python, Elasticsearch, Logstash, Kibana (ELK).
- Rotation 2: Site/Service Reliability Engineering (SRE). Nginx, Polymer (HTML, JavaScript), Node.js (Express.js), PHP, Database (Oracle, Cassandra), REST API Design.

#### Ericsson

Stockholm, Sweden

INTERNSHIP AND MASTER THESIS

Jan. 2016 - Aug. 2016

- Machine Learning and Data Analysis on log data. Recurrent Neural Network (RNN) and Naive Bayes.
- Python (with Keras, Numpy, SciPy and Theano), Java and Amazon EC2.
- Large scale software architecture.

#### Robotics Institute, UESTC

Chengdu, China

RESEARCH ASSISTANT

Sep. 2012 - Jun. 2014

- Design and development of intelligent controlling algorithms and solutions for robot manipulators and marine risers.
- Implementation of the algorithms on real robots. Accomplishment of several papers published.

### PROJECTS

#### WeChat WeApp: 500px | 微信小程序之 500px

Amsterdam, The Netherlands

PERSONAL OPEN SOURCE PROJECT

Oct. 2016

- JavaScript, CSS, XML.
- Front-end Design and Programming.

## Personal Project on Machine Learning

Stockholm, Sweden

KTH ROYAL INSTITUTE OF TECHNOLOGY (KTH)

Oct. 2015 - Sep. 2016

- Machine Learning algorithms analysis and programming using Python.
- Study and practice Apache Spark and Scala language.

## System Design using SystemC (C++) and Transaction Level Modeling (TLM)

Stockholm, Sweden

KTH ROYAL INSTITUTE OF TECHNOLOGY (KTH)

Sep. 2015 - Nov. 2015

- System design and implementation using SystemC: Bus, RAM and ROM, Channel and Interface, Transaction Level Modeling, Concurrency and Time, Process and Thread, Simulation, Debugging, Signal and Data Type.

## JPEG Decoding based on Xilinx's MicroBlaze Multiprocessor Embedded Platform

Eindhoven, The Netherlands

EINDHOVEN UNIVERSITY OF TECHNOLOGY (TU/E)

Feb. 2015 - Jun. 2015

- JPEG Decoding algorithm and Image Processing.
- Focused on the impact of multiple processors, accelerators, distributed shared heterogeneous memory hierarchy.
- Various parallel strategies. DMAs and Network-on-Chip Communication with limited bandwidth.

## Dynamic Memory Management for High Performance and Low Power Cost

Eindhoven, The Netherlands

EINDHOVEN UNIVERSITY OF TECHNOLOGY (TU/E)

Dec. 2014 - Jan. 2015

- Use smaller memories/buffers: Scratch Pad Memory (faster and less energy consuming)
- Reduce the number of memory accesses by optimizing C code: Loop Transformation, Temporal and Local Data Reuse, etc.

## Bitcoin Mining based on NVIDIA's GPUs using CUDA

Eindhoven, The Netherlands

EINDHOVEN UNIVERSITY OF TECHNOLOGY (TU/E)

Oct. 2014 - Dec. 2014

- Solve the hash algorithm for mining "fake" bitcoins by utilizing GPU's powerful data parallelism and multi-thread features.
- GPU architecture, multi-thread computing, shared memory. CUDA C and OpenCL.

## Wireless Sensor Network (WSN): Automatic Agricultural Monitor and Control

Eindhoven, The Netherlands

EINDHOVEN UNIVERSITY OF TECHNOLOGY (TU/E)

Sep. 2014 - Dec. 2014

- Design and evaluate a WSN based on a bunch of Atmel's low-power MCUs using C.
- Implement Beacon-enabled CSMA-based MAC protocol (IEEE 802.15.4) and hierarchy routing layer.

## Virtual Environment: Panum's Fusional Area Approximation

Eindhoven, The Netherlands

EINDHOVEN UNIVERSITY OF TECHNOLOGY (TU/E)

Sep. 2014 - Dec. 2014

- Design and conduct an experiment to measure the shape of a fusion area.
- Based on Fontys' VR-Cave laboratory and WorldViz Vizard. Python.

## Honors & Awards

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### SCHOLARSHIPS

2014 **Scholarship of Excellent Graduate** Outstanding performance during entire undergraduate time

UESTC, China

2013 **Jiuzhou Scholarship** Only two students were honored

Jiuzhou Group, China

2012 **Suzhou Industrial Park Scholarship** Top 5%

Suzhou Industrial Park, China

2011 **The People's Scholarship** Great grades in the first year

UESTC, China

## Socials

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### Business Development. Market Research. Presentation and Communication.

Finland & The Netherlands

EIT DIGITAL SUMMER SCHOOL

Aug. 2015, Helsinki, Finland

EIT DIGITAL WINTER SCHOOL

Feb. 2015, Eindhoven, The Netherlands

### Volunteer on ICONS 2013

Chengdu, China

THE 3RD IFAC INTERNATIONAL CONFERENCE ON INTELLIGENT CONTROL AND AUTOMATION SCIENCE (ICONS 2013)

Sep. 2013

### Volunteer on ICSR 2012

Chengdu, China

INTERNATIONAL CONFERENCE ON SOCIAL ROBOTICS (ICSR 2012)

Oct. 2012