

# Linyi LI

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## EDUCATION

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**Tsinghua University (THU)**, Beijing, China  
Bachelor of Computer Science and Technology

*August 2014 - Present*

**GPA: Major: 91.6/100 (Top 7%)**

Overall: 90.3/100

**Junior Year Major: 95.0/100 (Top 3 of 171)**

Junior Year Overall: 93.9/100

**Core Courses:**

**CS:** Data Structure, Formal Language and Automation, Principles of Compilers, Computer Graphics, Software Engineering, Computer Networks, Signal Processing, Operating Systems, Data Mining

**Math:** Calculus, Linear Algebra, Discrete Mathematics, Complex Analysis, Probability and Statistics, Numerical Analysis

## RESEARCH EXPERIENCE

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**API Modeling and Scenario-based Testing**

*Mar 2017 - present*

*Advisor: Prof. Xiaoying Bai, Tsinghua University*

*Research Assistant*

- Led the group research and designed an abstract scenario model for API integration testing.
- Defined a series of specification extensions that embedded the scenario model with OpenAPI.
- Proposed data generation and test case generation algorithms for the scenario model.
- Developed an automated testing tool chain that verified the effectiveness and usefulness of the scenario model and the algorithms.

**Deep Convolutional Network Explanation with Integrated Gradients**

*Jun 2017 - Sept 2017*

*Advisor: Prof. Matt Fredrikson, Carnegie Mellon University*

*Research Internship*

- Applied integrated gradients, a type of influence analysis method, to convolutional networks.
- Verified effectiveness of integrated gradients in the measurement of individual neuron contribution.
- Developed a way to capture vital lesions in Diabetic Retinopathy Detection with this method.

**Distributed API Testing System**

*Nov 2015 - Jun 2017*

*Advisor: Prof. Xiaoying Bai, Tsinghua University*

*Research Assistant*

- Designed the entire architecture of a distributed automated web API testing system for load testing.
- Developed the center controller and monitor module of the testing cluster.
- Defined communication protocol between distributed nodes.

**MIPS32 Architecture CPU Implementation with FPGA**

*Sept 2016 - Dec 2016*

*Advisor: Prof. Weidong Liu, Tsinghua University*

*Class Project*

- Designed the 5-stage pipelined CPU supporting the MIPS32 instruction set.
- Implemented the structure on FPGA using Verilog.
- Created product to be compatible with UNIX-like operating systems.

## PUBLICATIONS

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1. Kals Leino, **Linyi Li**, Shayak Sen, Anupam Datta, Matt Fredrikson. Influence-Directed Explanations for Deep Convolutional Networks. *Arxiv Preprint* 1802.03788.
2. Junyi Wang, Xiaoying Bai, **Linyi Li**, Haoran Ma, Zhicheng Ji. A Model-Based Framework For Cloud API Testing. *Computer Software and Applications Conference (COMPSAC), 2017 IEEE 41st Annual. Vol. 2. IEEE, 2017. (DOI: 10.1109/COMPSAC.2017.24)*

3. Junyi Wang, Xiaoying Bai, Haoran Ma, **Linyi Li**, Zhicheng Ji. Cloud API Testing. Verification and Validation Workshops (ICSTW), 2017 IEEE International Conference on Software Testing. IEEE, 2017. (DOI: 10.1109/ICSTW.2017.71)
4. **Linyi Li**, Xiaoying Bai, Zhicheng Ji, Haoran Ma. Lapis: Specification-Driven Web API Testing Based on Usage Scenario Model. *Submitted.*

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## SCHOLARSHIPS AND AWARDS

School Professional Practice Award (awarded to <b>4 of 171</b> )	2017
“Top Open” Oversea Training Award	2017
Academic Excellent Award with HUAWEI Scholarship (awarded to <b>3 of 171</b> )	2017
Practical Excellent Award with University Scholarship (awarded to <b>2 of 167</b> )	2016
School Academic Star Program Membership	2015
“Sogou Cup” Artificial Intelligence Programming Contest Top 16	2015
Top 0.03% on the National College Entrance Exam	2014
National Olympics in Informatics, Bronze Medal	2013
National Olympics in Informatics in Provinces, First Prize	2012

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## TEACHING EXPERIENCE

<b>Data Structure</b>	Sept 2015 - Jan 2016
<i>Student Teaching Assistant</i>	
<ul style="list-style-type: none"> <li>· Hosted two seminars for conducting assignment discussions.</li> <li>· Contributed several original problems for future assignments and exams.</li> </ul>	

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## INTERNSHIP EXPERIENCE

<b>Sogou Inc.</b>	Aug 2015 - Oct 2015
<i>Back-end Engineer</i>	<i>Beijing</i>
<ul style="list-style-type: none"> <li>· Designed the interfaces between back-end and front-end for a tutor ordering platform.</li> <li>· Implemented an efficient and advanced tutor search module that supported multiple keys.</li> </ul>	

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## SKILLS AND OTHERS

<b>Programming Languages</b>	C/C++, Python, Java, HTML, JavaScript, SQL, x86 Assembly, Verilog, ...
<b>Languages</b>	Chinese (proficient Mandarin and Xiang, intermediate Cantonese), fluent English, intermediate Tujia

*Last Updated: May 9, 2018*