

# LI QUAN

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## EDUCATION

Beihang University	M.S. in Information Engineering	GPA: 3.73/4.00 (top 3%)	Sep 2017 – Feb 2020
Beihang University	B.E. in Information Engineering	GPA: 3.71/4.00 (top 3%)	Sep 2013 – Jul 2017

## PUBLICATIONS

1. **Li Quan**, Qin Huang, "Transparent Coded Blockchain", ACM CoNEXT 2019, Orlando, FL, USA, December 9-12, 2019.
2. **Li Quan**, Qin Huang, Shengli Zhang, Zulin Wang, "Downsampling Blockchain Algorithm", IEEE INFOCOM 2019, Paris, France, April 29 - May 2, 2019.
3. Qin Huang, Qiang Xiao, **Li Quan**, Zulin Wang, Shafei Wang, "Trimming Soft-Input Soft-Output Viterbi Algorithms", IEEE Transactions on Communications (TCOM), Vol. 64, Issue, 7, 2016, Pages 2952-2960.
4. Ruilin Pei, Zulin Wang, Qiang Xiao, **Li Quan**, "Blind identification for Turbo codes in AMC systems", IEEE ICCSN 2016, Beijing, China, June 4-6, 2016.

## PATENTS

1. Qin Huang, **Li Quan**, "Information transmission and reception method and device", China patent, 2019.
2. Qin Huang, Shuai Wang, **Li Quan**, "Target localization method, device and electronic device based on querying", China patent, 2019.
3. Qin Huang, **Li Quan**, Zulin Wang, "Blockchain storage method and blockchain node", China patent, 2018.

## RESEARCH EXPERIENCES

<b>Blockchain Storage Reduction via Downsampling Algorithm</b>	<i>Prof. Qin Huang</i>
Research Assistant, National Science Foundation, Beihang University, Beijing, China	Sept 2017 – Present
<ul style="list-style-type: none"><li>• Researched on reducing the bloated storage of existing blockchain system using information and coding theory.</li><li>• Proposed a novel solution to use a downsampling algorithm to reduce storage required at each node, via simple verification.</li><li>• Accomplished orders of reduction in storage space while still satisfying confidence requirements. Published results in IEEE INFOCOM 2019, and applied national patents.</li></ul>	

<b>Algorithm Design and Enhance Polkadot Bridges Protocol</b>	<i>Prof. Roman Beck</i>
Research Assistant, IT University of Copenhagen, Copenhagen, Denmark	Aug 2019 – Sept 2019
<ul style="list-style-type: none"><li>• Lead the algorithm design for enhancing Polkadot bridge protocol implementation, specifically for BTC and ETH.</li><li>• Designed a vault system on top of XClaim for BTC and ETH, and implemented the logic for deposit and transfer.</li><li>• Built an intelligent contract that conforms to the decentralized interoperable trust infrastructure.</li><li>• Overall design won approval from Pokadot experts and won third place in final presentation.</li></ul>	

<b>Decoding Algorithm of Turbo Code for High Throughput Communication</b>	<i>Prof. Qin Huang</i>
Research Assistant, Beihang University, Beijing, China	Sept 2015 – June 2017
<ul style="list-style-type: none"><li>• Designed a new algorithm to reduce time complexity in Turbo code (forward error correction) encoding/decoding.</li><li>• Studied various existing algorithms including Scaled Max-Log-MAP, Trimming SOVA.</li><li>• Achieved significant performance enhancement and won best presentation award in Annual China Information Conference.</li></ul>	

## INDUSTRY EXPERIENCES

<b>Development of a Distributed Data Processing Pipeline</b>	
Software Development Intern, IT Orange LLC, Beijing	July 2015 – Sept 2015
<ul style="list-style-type: none"><li>• Investigated in optimizing and improve existing data analytics system and started the design of a new parallel framework.</li><li>• Completed the V1 design and proof of concept development to demonstrate a 10x efficiency enhancement.</li></ul>	

## AWARDS

• ACM CoNEXT, sponsored by ACM SIGCOMM (Travel Grant)	2019
• National Software and Information Talent Competition C/C++ Programming Design (National Third Place)	2019
• Blockchain Development and Application Competitions (Second Place)	2019
• The Mathematical Contest in Modeling (Meritorious Award)	2016

## SKILLS & LANGUAGES

**Proficient:** C++, Python, Solidity, MATLAB; **Intermediate:** Assembly Language and Verilog **Basic:** JavaScript, HTML  
**Standardized Tests:** TOEFL: 100 (R27 L27 S22 W24), GRE: 322 (V153 + Q169) + AW3.5