

# 侯璐

## 个人简历



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## 教育经历

- 2014 - 2019 工学博士 (硕博连读)  
专业: 通信工程  
北京邮电大学-智能计算与通信实验室
- 2010 - 2014 工学学士  
专业: 通信工程  
北京邮电大学-信息与通信工程学院
- 论文情况 已发表7篇  
一作4篇, 3篇SCI, 1篇EI  
最高影响因子 ( $IF = 10.435$ )

## 获奖情况

- 2017 研究生国家奖学金  
2018 北京邮电大学博士生创新基金  
2018 第二届实验室良飞奖 (1人/年)

## 个人技能

- 开发能力:** 热爱 Python 开发, 具有多年 Python 开发经验, 并运营着 Python 技术公众号; 熟悉 Node.js 底层异步 I/O 与事件驱动原理, 并有大量 Node.js 实践经验; 具有一定的 C/C++ 等其他语言开发经验等。
- 机器学习:** 热爱机器学习, 熟悉各类机器学习算法, 包括底层数学原理。近期将切入实验室自然语言处理相关项目组任项目负责人。
- 服务架构设计:** 熟悉服务架构设计理论, 包括分布式系统架构设计方法论, 实现技术体系等; 具有一定的软件工程知识, 熟悉 RESTful 风格。
- 互联网安全:** 熟悉 TLS 安全机制、OAuth2.0 认证机制等, 具备一定的互联网安全相关知识。
- 区块链:** 熟悉区块链底层原理、以太坊智能合约, 具有一定的 Hyperledger Fabric 搭建经验。
- Linux 系统:** 具有丰富 linux 系统开发经验。
- 团队协作能力:** 能够同团队人员高效协作。
- 团队领导能力:** 具有一定的团队领导能力, 能够融入团队, 知人善任, 能够合理分配任务, 具有亲和力。
- 工作责任心:** 具有极强责任心, 工作认真细致, 能够吃苦耐劳, 承担各项事宜并按时按量交付。
- 写作能力:** 具有极强的文档、报告、记录编写及排版能力。
- 学习能力:** 具有极强的学习能力, 探索能力和求知欲, 善于运用各类工具, 抽钉拔楔, 澄源正本, 乐于接触新鲜前沿的知识。
- 英文能力:** 具备较好的英文能力, 能够熟练地听、说、读、写。

## 核心项目经历

### I. LoRaWAN™ 系统设计与实现

项目负责人

- 负责项目进度管理, 需求分析与功能拆分, 小组人员分工等。领导小组设计实现了基于 LoRaWAN™ 协议的云服务系统, 包括自适应数据速率 (ADR) 算法设计等;
- 整体架构设计。独立设计了分布式系统架构。
- 整体方案设计。独立完成了实现方案设计, 包括代码仓库架构, 代码风格统一, Code Review 等。
- 核心模块编写。独立完成了 MAC 层消息解析封装、设备注册两大核心模块的编写。
- 文档编写。独立完成文档模板设计, 领导小组完成文档编写, 内容审核修改等。
- 功能测试。独立利用 Python 实现了 LoRaWAN™ 设备模拟程序及错误数据发送程序, 用于系统功能性测试。

主要开发语言——Node.js, Python。

产品网站: <https://www.xisiot.com/>

### II. 物联网云平台设计与实现

副项目负责人

- 参与团队云平台架构设计, 完成论文产出 (杂志: *IEEE Communications Magazine*)。
- 独立完成服务端安全方案设计与实现。为平台设计并实现了加密、鉴权、OAuth2.0 认证、权限管理等安全机制;
- 独立完成 **a** 亚马逊 Alexa 服务接入 (语句设计, 接口开发等), 已发布的 Skill: MHaSa;
- 独立完成 Elasticsearch 全文搜索引擎搭建与接口开发; 利用 Python 进行数据清理, 数据初始化及 Elasticsearch 监控;
- 参与团队部署、运维、功能测试、性能测试;

主要开发语言——Node.js, Python。

### III. 车联网资源分配算法研究

个人

博士论文: “面向车联网的移动云网络资源管理与优化研究”, 来自“国家自然科学基金项目”。针对车联网相关业务, 利用机器学习等理论工具, 研究分层云计算车联网中的通信资源、计算资源与存储资源管理问题。并参与了多个自然科学基金项目及横向研究性项目。已发表相关论文两篇, 另有一篇论文进入二审阶段。

主要算法: 动态规划与机器学习。

主要开发语言: Python。

工具: Jupyter, TensorFlow 等。

# Lu Hou

## Curriculum Vitae



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<https://github.com/houluy>

## EDUCATION

2014 – 2019 **Doctor of Philosophy**  
*Beijing Univ. of Posts and Telecom.*

2010 – 2014 **Bachelor of Engineering**  
*Beijing Univ. of Posts and Telecom.*



PUBLICATIONS **7 papers in total(4 for first author)**  
Highest IF (IF = 10.435)  
*JCR Q1. IEEE Commun. Mag.*

## AWARDS

2017 **China National Scholarship**  
2018 **BUPT Excellent Ph.D. Students Foundation**  
2018 **2<sup>th</sup> LiangFei Scholarship** (One student each year)

## PERSONAL SKILLS

### Developing ability

Strong passion on Python  developing. Several years of Python experience. Running an open techblog on WeChat. Know Node.js  well in term with asynchronous I/O and concept of event driven. Rich experience on Node.js development.

### Machine learning

Strong passion on machine learning. Good at different kinds of algorithms, especially mathematical theories.

### Service architecture

Familiar with design theory of service architecture. Have knowledge on architecture design and practical experience.

### Internet Security

Familiar with some security mechanisms such as TLS and OAuth2.0.

### Blockchain

Familiar with the law of blockchain and the smart contract of Ethereum. Have some experience on building Hyperledger Fabric network.

### Teamwork

Good at efficient collaboration with teammates.

### Team leading

Have some ability of leading, knowing people and assigning works in a rational manner.

### Working Responsibility

Have strong responsibilities on work. Hardworking with carefulness and on-time delivery.

### Writing

Very strong ability of writing documents, reports, records and PPTs.

### Learning ability

Very strong ability of learning and researching. Good at utilizing tools to solve problems. Happy to be engaged in frontier knowledge.

## MAJOR PROJECT EXPERIENCES

OCT. 2017 – NOW

### LoRaWAN IoT system Project Leader


1. Be in charge of project management, requirements analysis and features resolving. Leading the group to implement an LoRaWAN™ system, including physical layer algorithms designs such as ADR.
2. Architecture design. Design the distributed system architecture on my own.
3. Solution design. Design on solution including repo structure and coding style. Review codes from group members.
4. Develop on core modules. Develop independently both MAC-layer message parsing and encapsulating and device registration modules.
5. Documentation. Design document style individually. Lead group to fulfill the document and revise.
6. Functional test. Implement a LoRa device emulator and error data sending program in Python by myself, in order to test the function and vulnerability of system.

Major developing language: Node.js, Python.

Product: <https://www.xisiot.com/>

SEP. 2016 – NOW

### IoT cloud Deputy Project Leader

1. Take part in architecture design of IoT cloud and output a paper on *IEEE Communications Magazine*.
2. Design and implementation of security scheme of services, such as de/encryption, OAuth2.0 authentication and authorization and authority management.
3. Integrate  Amazon Alexa service by myself, including the voice design and API development. Distributed skills: MHaSa.
4. Deploy Elasticsearch and develop API independently for IoT cloud. Use Python for data cleaning, data initializing and service monitoring.
5. Take part in deployment, maintenance, functional test and performance evaluation.

Major developing language: Node.js, Python.

SEP. 2015 – NOW

### Vehicular Networks Individual Research

Title of doctoral dissertation: “**Research on Resource Management and Optimization of Mobile Cloud Networks for Internet of Vehicles**” from *The National Natural Science Foundation of China*. By using convex optimization, data analyze, machine learning, etc, I tried to study the management strategies of computing, communication and storage resources in cloud based IoV. During the study, I’ve taken part in several NSFC or horizontal projects.

Major algorithms: dynamic programming, machine learning.

Major researching language: Python.

Major tools: IPython, TensorFlow, etc.

## PUBLICATIONS

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1. **Lu Hou**, Shaohang Zhao, Xiong Xiong, Kan Zheng, Periklis Chatzimisios, M. Shamim Hossain, Wei Xiang, "Internet of things cloud: architecture and implementation," *IEEE Communications Magazine*, vol. 54, no. 12, Dec. 2016, pp. 32-39. (IF = 10.435)
2. **Lu Hou**, Shaohang Zhao, Xing Li, Periklis Chatzimisios, Kan Zheng, "Design and implementation of application programming interface for Internet of things cloud," *International Journal of Network Management*, vol. 27, no. 3, June 2016. (IF = 1.118)
3. **Lu Hou**, Kan Zheng, Periklis Chatzimisios, Yi Feng, "A continuous-time Markov decision process-based resource allocation scheme in vehicular cloud for mobile video services," *Computer Communications*, vol. 118, Mar. 2018, pp. 140-147. (IF = 3.338)
4. **Lu Hou**, Lei Lei, Kan Zheng, "Design on publish/subscribe message dissemination for vehicular networks with mobile edge computing," *2017 IEEE GLOBECOM*, Dec. 2017
5. **Lu Hou**, Lei Lei, Kan Zheng, Xianbin Wang, "A Q-learning based Proactive Caching Strategy for Non-safety Related Services in Vehicular Networks," *IEEE Internet of Things Journal*, **Revised**
6. Kan Zheng, **Lu Hou**, Hanling Meng, Qiang Zheng, Ning Lu, Lei Lei, "Soft-defined heterogeneous vehicular network: architecture and challenges," *IEEE Network*, vol. 30, no. 4, July 2016, pp. 72-80. (IF = 7.23)
7. Xiong Xiong, **Lu Hou**, Kan Zheng, Wei Xiang, M. Shamim Hossain, and Sk Md Mizanur Rahman, "SMDP-based radio resource allocation scheme in software-defined internet of things networks," *IEEE Sensors Journal* vol. 16, no. 20, June 2016, pp. 7304-7314. (IF = 2.512)
8. Xiong Xiong, **Lu Hou**, Long Zhao, "A Group-Based Massive Multiple Access Scheme in Cellular M2M Networks," *Computer Communications*, vol. 121, May. 2018, pp. 44-49. (IF = 3.338)