侯璐

个人简历

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核心项目经历

1. LoRaWAN™ 系统设计与实现 (Oct. 2017 – Now)

团队领导人

1. 项目进度管理，需求分析与功能拆分，团队人员分工等。领导团队设计实现了基于 LoRaWAN™ 协议的整套云服务系统，包括自适应数据速率 (ADR) 算法设计等；
2. 整体架构设计。独立设计了分布式系统架构。
3. 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。
4. 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。
5. 文档编写。独立完成文档模板设计，领导团队完成文档编写，内容审核修改等。
6. 功能测试。独立利用 Python 实现了 LoRaWAN™ 设备模拟程序，可用于功能性测试。

主要开发语言——Node.js，Python。

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2. 物联网云平台设计与实现 (Sep. 2016 – Now)

副团队领导人

1. 参与团队云平台架构设计，完成论文产出 [1]。
2. 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；
3. 独立完成亚马逊 Alexa 服务接入（语句设计，接口开发等）；
4. 独立完成 Elasticsearch 全文搜索引擎搭建与接口开发；数据清理，数据初始化脚本开发；
5. 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。

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3. 车联网资源分配算法研究 (Sep. 2015 – Now)

个人研究

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资源管理问题。并参与了多个自然基金项目及横向研究性项目。主要算法：动态规划与机器学习。主要开发语言：Python，工具：Jupyter 等。

计算机技能

精通　Python, Node.js

熟悉　C, C++, MATLAB, LaTeX, SQL, shell, HTML

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

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

1. 开发能力：具有多年 Python 开发经验，并运营着 Python 技术公众号，目前 500 人关注；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；
2. Linux 系统：能够熟练使用 Linux 系统；
3. 机器学习：熟悉各类机器学习算法，包括底层数学原理。博士论文主要以增强学习为主要工具完成。近期将切入实验室自然语言处理相关项目组任团队领导。
4. 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和项目管理能力。
5. 团队协作能力：能够同团队人员高效协作；熟悉 Git, JIRA 等团队协作工具。
6. 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。
7. 写作能力：具有极强的文档、报告、记录编写及排版能力。
8. 学习能力：具有极强的学习能力，善于运用各类工具，抽钉拔楔，澄源正本。

自我评价

本人性格开朗，平易近人，善于沟通，幽默风趣，待人热情真诚。博士期间认真负责，不惧挑战，善于为老师分担压力，善于倾听。本人在博士期间培养了较强的自我学习与解决问题能力，团队协作与管理能力和项目管理能力。最后，本人具备较好的英文能力，能够熟练地听、说、读、写。

Lu Hou

Curriculum Vitae

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https://github.com/houluy

DOCTORAL RESEARCH

"Research on Resource Management and Optimization of Mobile Cloud Networks for Internet of Vehicles" from *The National Natural Science Foundation of China*

My research mainly focuses on the resource management issues in multi-layer cloud based Internet of Vehicles (IoV). Aiming at the features of IoV traffic, I proposed some key algorithms for resources optimization of communications, computing and storage with the help convex optimization, machine learning, etc.

MAJOR RESEARCH DIRECTIONS

INTERNET OF THINGS CLOUD	Architecture designs, implementations and performance optimizations.
LORAWAN™ SYSTEMS	Protocol analysis, Architecture designs implementations and performance optimizations.
VEHICULAR NETWORKS	Resource management of cloud based vehicular networks

EDUCATION

2014 – 2019 **Doctor of Philosophy**
COMMUNICATIONS ENGINEERING
Intell. Comput. and Commun. Lab
Beijing Univ. of Posts and Telecom.

2010 – 2014 **Bachelor of Engineering**
COMMUNICATIONS ENGINEERING
School of Inform. and Commun. Eng.
Beijing Univ. of Posts and Telecom.

JUNE 2019 **Graduation**
Beijing Univ. of Posts and Telecom.

AWARDS

2017 **China National Scholarship**
Intell. Comput. and Commun. Lab
Beijing Univ. of Posts and Telecom.

2018 **BUPT Excellent Ph.D. Students Foundation**
Intell. Comput. and Commun. Lab
Beijing Univ. of Posts and Telecom.

2018 2^{th} **LiangFei Scholarship**
Intell. Comput. and Commun. Lab
Beijing Univ. of Posts and Telecom.

ENGLISH SKILLS

Able to *Listen*, *Speak*, *Read* and *Write* English skillfully.

MAJOR PROJECT EXPERIENCES

SEP. 2014 – JUNE 2015

DSRC protocol stack and applications
Developer

Participate in the development of *IEEE 802.11p* protocol stack, and implements some applications such as collision warning on ARM development board. **Major developing language: C.**

SEP. 2016 – NOW

IoT cloud
Deputy Team Leader

Responsible for the management of teammates and project schedule, the development of authentication and authorization for servers, access for Amazon Alexa, searching services with Elasticsearch, and the deployment, operations and performance evaluations. **Major developing language: Node.js**.

OCT. 2017 – NOW

LoRaWAN™system
Team Leader

Leading the team to design and implement the whole LoRaWAN™sy for IoT applications, including key algorithms such as Adaptive Data Rate (ADR) controls. As a team leader, I need to manage the whole project schedule, assign tasks to members and make summaries. Besides, I have to handle the technical problems and directions, making sure the project runs on the correct rail. I also need to control the documents, keeping it stick to the projects. I'm responsible for some development in this project. **Major developing language: Node.js**.

SEP. 2015 – NOW

Research on Vehicular Networks
Individual

My doctoral research throughout my Ph.D. By using convex optimization, data analyze, machine learning, etc. I tried to study the resource management issues in cloud based IoV. During the study, I've taken part in several NSFC or horizontal projects. **Major researching language: Python, major tools: IPython, TensorFlow, etc.**

PROGRAMMING SKILLS

EXPERT	Python, Node.js
INTERMEDIATE	C, C++, MATLAB, LaTeX, SQL shell, HTML, Javascript, CSS
BEGINNER	Go, Rust, lisp, Java

PUBLICATIONS

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*, **Under review**
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)

COMPUTER SKILLS

EXPERT	Microsoft Office, Git, reStructuredText, Markdown, Linux, vim, HTTP, MQTT, kafka, ProtocolBuffer, gRPC, TLS, Locust, Github, StackOverflow, Readthedocs ...
INTERMEDIATE	Elasticsearch, Nginx, HAProxy, Redis, MySQL, MongoDB, ...

WORKING SKILLS

Design on service architecture

Has knowledge on architecture design and practical experience.

Developing ability with Python

Strong ability of Python developing. Running an open tech-blog on WeChat.

Machine learning

Has knowledge on algorithms of machine learning.

Research

Has the ability of doing researches. Good at discovering and solving problems.

Leadership

Has the ability of leaders.

Writing

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