

# 杨保华

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## 教育背景

<b>2007.09 - 2013.01</b>	<b>工学博士（硕博连读）</b> 清华大学，信息技术研究院
<b>2010.09 - 2011.09</b>	<b>访问学者</b> Dept. of Computer Science, UC Berkeley
<b>2003.08 - 2007.07</b>	<b>工学学士</b> 清华大学，自动化系

## 研究方向

计算机网络与设备中的高性能算法设计和智能优化技术；  
网络管理跟监控中的关键技术，包括分类、识别等；  
新兴技术，包括云计算/数据中心、软件定义网络中的热点问题。

## 科研经历

<b>访问学者</b>	<b>UC Berkeley</b>	2010.09 ~ 2011.09
	Berkeley, CA 94720	

在 Scott Shenker 教授指导下研究基于 OpenFlow/NOX 等平台进行网络管理和流量控制的关键技术。期间提出应对链路故障的全新路由方案，性能显著优于现有方案。合作完成论文2篇（1篇发表于ACM HotNets）。

<b>实习研究</b>	<b>IBM 中国研究院</b>	2008.06 ~ 2008.12
	中国，北京，100094	

在郑凯研究员指导下研究网包分类和模式匹配问题，实现算法若干，实现模块化网包分类算法评测平台并对知名算法进行评测。期间合作完成论文1篇，发表于 IEEE INFOCOM 国际会议。

<b>项目研发</b>	<b>清华大学</b>	2007.08 ~ 2009.10
	中国，北京，100084	

参加并完成863计划（2007AA01Z468）项目一项。设计并实现路由、访问控制、日志管理等子系统，支持20Gbps的实时流量处理和每秒百万级别的新建流。期间发表国际会议论文若干。

## 奖励荣誉

IBM 优秀博士生奖学金	IBM 公司	2011	中国地区共9名获奖者
校优秀辅导员标兵称号	清华大学	2010	自动化系1人
校一等奖学金	清华大学	2009, 2011	前5%
最佳论文奖	ICNS	2007	
校一等奖学金，社会工作奖学金	清华大学	2006	前5%

## 技能积累

- 熟练掌握 C/C++，Python，Java 等计算机程序语言；
- 高效使用流行研发工具，包括 GCC/VC，VIM，Eclipse，SVN/Git 等；
- 熟悉操作系统相关技术，包括 Unix/Linux 系列和 Windows 系列操作系统。

## 申请专利

### 《一种多域的网包的分类方法和装置》

杨保华, 薛一波, 李军, 2010年5月。公开号 CN101714948A。

### 《基于半监督学习的网络协议识别方法及系统》

杨保华, 李军, 2012年4月。公开号 CN102611706A。

## 发表论文

- **Practical Multi-tuple Packet Classification using Dynamic Discrete Bit Selection**  
Baohua Yang, Jeffrey Fong, Weirong Jiang, Yibo Xue and Jun Li, *IEEE Transactions on Computers* (to appear).
- **Data-Driven Network Connectivity**  
Junda Liu, Baohua Yang, Scott Shenker and Michael Schapira, *10th ACM Workshop on Hot Topics in Networks (HotNets-X)*, Cambridge, MA, November 2011.
- **SMILER: Towards Practical Online Traffic Classification**  
Baohua Yang, Guangdong Hou, Lingyun Ruan, Yibo Xue and Jun Li, *7th ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS 2011)*, Brooklyn, NY, October 2011.
- **DFC: Towards Effective Feedback Flow Management for Datacenters**  
Baohua Yang, Guodong Li, Yaxuan Qi, Yibo Xue and Jun Li, *9th International Conference on Grid and Cloud Computing (GCC 2010)*, Nanjing, China, November 2010.
- **Scalable NIDS via Negative Pattern Matching and Exclusive Matching**  
Kai Zheng, Xin Zhang, Zhiping Cai, Zhijun Wang and Baohua Yang, *29th IEEE International Conference on Computer Communications (INFOCOM 2010)*, San Diego, CA, USA, March 2010.(acceptance rate=17.5%)
- **DBS: A Bit-level Heuristic Packet classification Algorithm for High Speed Network**  
Baohua Yang, Xiang Wang, Yibo Xue and Jun Li, *15th IEEE International Conference on Parallel and Distributed System (ICPADS 2009)*, Shenzhen, China, December 2009.(acceptance rate=28.8%)
- **Towards High-performance Network Intrusion Prevention System on Multi-core Network Service Processor**  
Xiang Wang, Yaxuan Qi, Baohua Yang, Yibo Xue and Jun Li, *15th IEEE International Conference on Parallel and Distributed System (ICPADS 2009)*, Shenzhen, China, December 2009.(acceptance rate=28.8%)
- **Bitmap data structure: Towards high-performance network algorithms designing**  
Baohua Yang, Yaxuan Qi, Yibo Xue and Jun Li, *Computer Engineering and Application*, Vol. 45, no.15, pp. 1-5, May 2009.
- **Discrete Bit Selection: Towards a Bit-level Heuristic Framework for Multi-dimensional Packet Classification**  
Baohua Yang, Yaxuan Qi, Fe He, Yibo Xue and Jun Li, *28th IEEE International Conference on Computer Communications (INFOCOM 2009) workshop*, Rio de Janeiro, Brazil, April 2009.
- **Packet Classification Algorithms: From Theory to Practice**  
Yaxuan Qi, Lianghong Xu, Baohua Yang, Yibo Xue and Jun Li, *28th IEEE International Conference on Computer Communications (INFOCOM 2009)*, Rio de Janeiro, Brazil, April 2009.(acceptance rate=19.7%)
- **Towards Effective Network Algorithms on Multi-core Network Processors**  
Yaxuan Qi, Zongwei Zhou, Baohua Yang, Fei He, Yibo Xue and Jun Li, *4th ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS 2008)* short paper, May 2008.(acceptance rate=25.4%)
- **Towards High-performance Flow-level Packet Processing on Multi-core Network Processors**

Yaxuan Qi, Bo Xu, Fei He, Baohua Yang, Jianming Yu and Jun Li, *3rd ACM/IEEE Symposium on Architectures for Networking and Communications Systems (ANCS 2007)*, July 2007.(acceptance rate=28.5%)

- **Towards System-level Optimization for High Performance Unified Threat Management**

Yaxuan Qi, Baohua Yang, Bo Xu, and Jun Li, *3rd International Conference on Networking and Services (ICNS 2007)*, Athens, June 2007.(acceptance rate=32%)