

Hui Yang

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Education:

- 8/2009 - 7/2014 **Beijing University of Posts and Telecommunications** **PH.D**
Ph.D in the Communication and Information Systems
- 8/2005 - 8/2009 **Beijing University of Posts and Telecommunications** **B. E.**
Bachelor of Mechanical Engineering and Automation

Research Interests:

- Main research interests include network architecture, software defined optical network (SDON), dynamic optical network, flexible bandwidth optical network, cross-stratum optimization (CSO) and network protocols and algorithms etc.
- Proficient in **Optical Networks** and **Data Center Networks (Intra & Inter)**, master of the key technologies (**SDN, OpenFlow, Virtualization, ASON/GMPLS, WSON, PCE, PTN, OTN, MSTP, PON et al**), and highly skilled in the development of **Metro Area Network** and **Access Network**.
- Experienced in the standards of optical networking, including IETF RFC/Draft, ONF and ITU-T Standard/ Recommendation, especially in field of **routing, signaling** and **control architectures**.

Professional Experience

- 6/2014 - Present **Beijing University of Posts and Telecommunications**
State key lab of Information Photonics and Optical Communications

Professional Experiences:

- 2013/01~Present: team leader in **National Natural Science Fund** “Software Customized Theories and Implementation Mechanism Research for Flexible Control of Optical Networks”, the innovation of software customized theories, network modeling and implementation mechanism;
- 2012/01~Present: main member in **National 863 Project** “Key technologies and network architecture in ultra-large capacity all-optical switching networks”; the research of multi-flow virtual concatenation theory in flexi-grid optical networks and control architecture based on SDN;
- 2012/01~Present: main member in **National 973 Project** “Basic research on the Pbit/s control and management enabled optical networks”; the research of cross stratum resilience and control architecture;
- 2013/06~Present: main member in **Beijing Investment Promotion Bureau** “Trading Platform of Investment Resource”, the design of trading process design/ production contract/ project financing plan/ team structure/ management training;
- 2012/01~Present: team leader in **BUPT & XXX** “Research and prototype development of cross stratum control technologies (second phase)”, the design of CSO networking architecture and the innovation of SDN theory and algorithms;
- 2012/01~Present: team leader in **National Natural Science Fund** “Space situational awareness system” & “Experimental system in software defined networking of Space-Air-Ground integration”; the research of cloud computing service architecture, software defined networking of Space-Air-Ground integration and security architecture of delay tolerant networks.
- 2012/01~2012/12: team leader in **BUPT & XXX** “Key technologies in distributed computing cooperative carrying network and programming” (XXX excellent industry-university-research project in 2012), the research of large scalable distributed network computing, cooperative and virtualization technologies;
- 2012/01~2012/12: team leader in **China Electric Power XXX** “Key technologies in software defined power network”, the design of SDN power networking architecture, security mechanism and the innovation in the access network;
- 2011/01-2011/12: main member and software & hardware engineer in **Shunyi People Broadcasting Radio** “Monitoring system in emergency broadcast”, the development and design of gateway between Internet and broadcasting network, and achieve the database and networking overall;
- 2010/01-2010/12: main member and hardware engineer in **Changchun University of Science and Technology** “Development

in Space optical communication technologies”, hardware achievement of the audio and video encoding and decoding and multiplexing/demultiplexing.

Social Work:

- 2013.06 – Present: The assistant director of information department in Beijing Investment Promotion Bureau;
- 2011.09 – Present: The constitutor of the branch of Communist Party and monitor of Ph. D programs in State Key Lab of BUPT;
- 2012.05 – 2012.12: The member of Beijing Party Member cadre training school of graduate student;
- 2011.08 – 2012.08: Excellent member of BUPT Party Member cadre training school;
- 2011.08 – 2013.08: The assistant teacher in charge of laboratory courses in BUPT for 2 years;
- 2010.08 – 2011.08: The member of Communist Youth League school in BUPT;
- 2009.08 – 2011.08: The vice monitor of master programs in State Key Lab of BUPT;
- 2009.08 – 2010.08: The vice secretary of Communist Youth League committee in State Key Lab of BUPT;
- 2009.08 – 2010.08: Project Manager of Ericsson Club in BUPT;
- 2009.08 – 2011.08: The deputy director of the office in Postgraduate Student Union of BUPT;
- 2009.08 – 2011.08: The assisting management in State Key Lab of BUPT;
- 2008.08: The volunteer of Beijing Olympic Games.

Honors:

- 2013 – 2014: **Supported by BUPT Excellent Ph.D. Students Foundation (40, 000 \$);**
Excellent party member of BUPT;
Excellent papers in the academic forum of BUPT;
- 2012 – 2013: **Beijing Outstanding Student Award** (Three-virtues student);
Supported by PMC-BUPT Research Foundation (10,000 \$);
Second Prize in Poster Competition of QMUL-BUPT Joint Research Postgraduate Workshop;
Outstanding Ph.D & Team Leader in State Key Lab of BUPT;
Excellent member of BUPT Party Member cadre training school;
Excellent Class of Beijing Party Member cadre training school of graduate student;
Excellent party worker in State Key Lab of BUPT;
Excellent postgraduate cadre of BUPT;
- 2011 – 2012: **The member of Technical Program Committee** in IEEE ISPA 2012 (**Only student member**);
Excellent Young Communist of Capital Universities Pioneer Cup;
Excellent postgraduate cadre of BUPT;
First prize excellent scholarship;
- 2010 – 2011: The **outstanding contributor** in Postgraduate Student Union of BUPT;
Outstanding Master in State Key Lab of BUPT;
First prize excellent scholarship;
- 2005 – 2009: First & second prize excellent scholarship for three times.

Papers & Patents & proposals:

• 60+ papers published/hired (30 papers for first author as follows), 20 patents, 1 proposal for IETF.

- [1] **Hui Yang**, Jie Zhang, Yongli Zhao, Yuefeng Ji, Jianrui Han, Yi Lin, and Young Lee, “CSO: Cross Stratum Optimization for Optical as a Service,” **IEEE Communications Magazine**, vol. 53, no. 8, pp. 130-139, Aug. 2015. (SCI)
- [2] **Hui Yang**, Jie Zhang, Yuefeng Ji, Yuanlong Tan, Yi Lin, Jianrui Han, and Young Lee, “Performance evaluation of data center service localization based on virtual resource migration in software defined elastic optical network,” **Optics Express**, vol. 23, no. 18, pp. 23059-23071, Sep. 2015. (SCI)

- [3] **Hui Yang**, Jie Zhang, Yongli Zhao, Yuefeng Ji, Jialin Wu, Yi Lin, Jianrui Han, and Young Lee, “Performance evaluation of multi-stratum resources integrated resilience for software defined inter-data center interconnect,” **Optics Express**, vol. 23, no. 10, pp. 13384-13398, May 2015. (SCI)
- [4] **Hui Yang**, Jie Zhang, Yongli Zhao, Yuefeng Ji, Hui Li, Yi Lin, Gang Li, Jianrui Han, Young Lee, and Teng Ma, “Performance evaluation of time-aware enhanced software defined networking (TeSDN) for elastic data center optical interconnection,” **Optics Express**, vol. 22, no. 15, pp. 17630–17643, Jul. 2014. (SCI)
- [5] **Hui Yang**, Yongli Zhao, Jie Zhang, Shouyu Wang, Wanyi Gu, Yuefeng Ji, Jianrui Han, Yi Lin and Young Lee, “Multi-Stratum Resources Integration for OpenFlow based Data Center Interconnect [Invited],” **Journal of Optical Communications and Networking**, vol. 5, no. 10, A240-A248, Oct. 2013. (SCI)
- [6] **Hui Yang**, Jie Zhang, Yongli Zhao, Hui Li, Shanguo Huang, Yuefeng Ji, Jianrui Han, Yi Lin, and Young Lee, “Cross Stratum Resilience for OpenFlow-enabled Data Center Interconnection with Flexi-Grid Optical Networks,” **Optical Switching and Networking, Invited**, vol. 11, part A, pp. 72-82, Jan.2014. (SCI)
- [7] **Hui Yang**, Jie Zhang, Yongli Zhao, Jianrui Han, Yi Lin, Young Lee, “Cross Stratum Optimization for Software Defined Multi-domain and Multi-layer Optical Transport Networks Deploying with Data Centers,” **Optical Switching and Networking**, to be published, 2015. (SCI)
- [8] **Hui Yang**, Jie Zhang, Yongli Zhao, Yuefeng Ji, Jialin Wu, Xiaosong Yu, Jianrui Han, and Young Lee, “Global Resources Integrated Resilience for Software Defined Data Center Interconnection Based on IP Over Elastic Optical Network,” **IEEE Communications Letters**, vol. 18, no. 10, pp. 1735-1738, Oct. 2014. (SCI)
- [9] **Hui Yang**, Lei Cheng, Junni Deng, Yongli Zhao, Jie Zhang, and Young Lee, “Cross-layer restoration with software defined networking based on IP over optical transport networks,” **Optical Fiber Technology**, vol. 25, pp. 80-87, Oct. 2015. (SCI)
- [10] **Hui Yang**, Lei Cheng, Guangjun Luo, Jie Zhang, Yongli Zhao, Huixia Ding, Jing Zhou, and Yang Wang, “Survivable virtual optical network embedding with probabilistic network-element failures in elastic optical networks,” **Optical Fiber Technology**, vol. 23, pp. 90-94, 2015. (SCI)
- [11] **Hui Yang**, Lei Cheng, Jian Yuan, Jie Zhang, Yongli Zhao, and Young Lee, “Multipath protection for data center services in OpenFlow-based software defined elastic optical networks,” **Optical Fiber Technology**, vol. 23, pp. 108-115, 2015. (SCI)
- [12] **Hui Yang**, Jie Zhang, Yongli Zhao, Lei Cheng, Jialin Wu, Yuefeng Ji, Jianrui Han, Yi Lin, and Young Lee, “Service-aware resources integrated resilience for software defined data center networking based on IP over Flexi-Grid optical networks,” **Optical Fiber Technology**, vol. 21, no. 1, pp. 93-102, 2015. (SCI)
- [13] **Hui Yang**, Jie Zhang, Yongli Zhao, Yuefeng Ji, Jianrui Han, Yi Lin, Shaofeng Qiu, and Young Lee, “Experimental Demonstration of Time-aware Software Defined Networking for OpenFlow-based Intra-Datacenter Optical Interconnection Networks,” **Optical Fiber Technology**, vol. 20, no. 3, pp. 169-176, 2014. (SCI)
- [14] **Hui Yang**, Jie Zhang, Yongli Zhao, Shouyu Wang, Wanyi Gu, Jianrui Han, Yi Lin, and Young Lee, “Multi-Flow Virtual Concatenation Triggered by Path Cascading Degree in Flexi-Grid Optical Networks,” **Optical Fiber Technology**, vol. 19, no. 6, pp. 604-613, Dec. 2013. (SCI)
- [15] **Hui Yang**, Jie Zhang, Yongli Zhao, JialinWu, Yuefeng Ji, Yi Lin, Jianrui Han, and Young Lee, “Experimental demonstration of remote unified control for OpenFlow-based software-defined optical access networks,” **Photonic Network Communications**, vol. 30, 2015. (SCI)
- [16] **Hui Yang**, Yongli Zhao, Jie Zhang, Lei Cheng, Yuefeng Ji, Jialin Wu, Jianrui Han, Yi Lin, Young Lee, “Multi-stratum resources resilience in software defined data center interconnection based on IP over elastic optical networks,” **Photonic Network Communications**, vol. 28, no. 1, pp. 58-70, 2014. (SCI)
- [17] **Hui Yang**, Yongli Zhao, Jie Zhang, Wanyi Gu, Shouyu Wang, Yi Lin and Young Lee, “Dynamic Global Load Balancing Strategy for Cross Stratum Optimization in OpenFlow-enabled Triple-M Optical Networks”, **Chinese Optics Letters**, vol. 11, no. 7, pp. 070605, Jul. 2013. (SCI)
- [18] **Hui Yang** and Jie Zhang, “Data Center Optical Interconnect with Software Defined Networking,” NCCA2015, **Best Paper Award**.

- [19] **Hui Yang**, Jie Zhang, Yongli Zhao, Yuefeng Ji, Young Lee, “Software Defined Clustered-Optical Access Networking for Ubiquitous Data Center Optical Interconnection,” **ICNC2016**, Feb. 2016, Hawaii. (EI: **Oral Presentation**)
- [20] **Hui Yang**, Yongli Zhao, Jie Zhang, Yuanlong Tan, Yuefeng Ji, Jianrui Han, Yi Lin, Young Lee, “Data Center Service Localization based on Virtual Resource Migration in Software Defined Elastic Optical Network,” **OFC2015**, Th4G.4, Mar. 2015, Los Angeles, US. (EI: **Oral Presentation**)
- [21] **Hui Yang**, Xiaoxu Zhu, Ruijie Zhu, Yongli Zhao, Jie Zhang, Jianrui Han, Yi Lin, Young Lee, “Multi-Stratum Resources Integration based on Network Function Virtualization in Software Defined Data Center Optical Interconnect,” **ACP2015**, AM1H.3, Nov. 2015, Hongkong. (EI: **Oral Presentation**)
- [22] **Hui Yang**, Wei Bai, Yuanlong Tan, Jie Zhang, Yongli Zhao, Jianrui Han, Yi Lin, and Young Lee “Software Defined Clustered-Optical Access Networking for Ubiquitous Data Center Optical Interconnection,” **ACP2015**, AS4H.5, Nov. 2015, Hongkong. (EI: **Oral Presentation**)
- [23] **Hui Yang**, Yongli Zhao, Jie Zhang, Jialin Wu, Jianrui Han, Yi Lin, Young Lee, Yuefeng Ji, “Multi-Stratum Resilience with Resources Integration for Software Defined Data Center Interconnection based on IP over Elastic Optical Networks,” **ECOC2014**, Tu.1.6.5, Sep. 2014, France. (EI: **Oral Presentation**)
- [24] **Hui Yang**, Lei Cheng, Jialin Wu, Yongli Zhao, Jie Zhang, Jianrui Han, Yi Lin, and Young Lee, “Multi-Stratum Resources Integration Resilience with for Software Defined Data Center Interconnect based on IP over Elastic Optical Networks,” **ACP 2014**, China. (EI)
- [25] **Hui Yang**, Jie Zhang, Yongli Zhao, Yuefeng Ji, Jianrui Han, Yi Lin, Shaofeng Qiu and Young Lee, “Experimental Demonstration of Time-aware Software Defined Networking for OpenFlow-based Optical Interconnect in Intra-Datacenter Networks,” **IEEE GLOBECOM 2013**, WS-CCSNA, Dec. 2013, Atlanta, US. (EI: **Oral Presentation**)
- [26] **Hui Yang**, Jie Zhang, Yongli Zhao, Young Lee, Yi Lin, Jianrui Han and Huiying Xu, “Multi-Dimensional Resources Integration in OpenFlow based Data Center Interconnection,” **IEEE INFOCOM 2013**, student poster, Apr 2013, Turin, Italy.
- [27] **Hui Yang**, Jie Zhang, Yongli Zhao, Yuefeng Ji, et al., “Experimental Demonstration of Latency-aware Software Defined Networking for OpenFlow-based Optical Interconnect in Intra-Datacenter Networks,” **ACP 2013**, AW4H.2, China. (EI: **Best Student Paper**)
- [28] **Hui Yang**, Yongli Zhao, Jie Zhang, et al., “Multi-Stratum Resources Integration for Data Center Application based on Multiple OpenFlow Controllers Cooperation,” **OFC/NFOEC2013**, NTu3F.7, Mar 2013, Anaheim, US. (EI: **Oral Presentation**)
- [29] **Hui Yang**, Jie Zhang, Yongli Zhao, Shouyu Wang, Wanyi Gu, Jianrui Han, Yi Lin and Young Lee, “Multi-Flow Virtual Concatenation Triggered by Path Cascading Degree in Flexible Spectrum Optical Networks,” **OFC/NFOEC2013**, JTh2A.62, 2013, Anaheim, US. (EI)
- [30] **Hui Yang**, Yongli Zhao, Jie Zhang, Rentao Gu, Jialin Wu, Jianrui Han, Yu Yao, Yi Lin, Young Lee, Yuefeng Ji, “Experimental Demonstration of Remote Unified Control for OpenFlow-based Software Defined Access Optical Networks,” **ECOC2013**, P.6.13, Sep. 2013, London, UK. (EI)
- [31] **Hui Yang**, Yongli Zhao, Jie Zhang, Yuefeng Ji, et al., “Experimental Setup for Remote Unified Control in OpenFlow-based Software Defined Access Optical Networks” **COIN 2013**, Oct. 2013, Beijing, China. (EI: **Oral Presentation**)
- [32] **Hui Yang**, Yongli Zhao, Jie Zhang, et al., “Cross Stratum Optimization of Application and Network Resource based on Global Load Balancing Strategy in Dynamic Optical Networks,” **OFC/NFOEC2012**, JTh2A.38, Mar 2012, Los Angeles, US. (EI)
- [33] **Hui Yang**, Jie Zhang, Yongli Zhao, Shanguo Huang, Yuefeng Ji, et al., “First Demonstration of Cross Stratum Resilience for Data Center Services in OpenFlow-based Flexi-Grid Optical Networks,” **ACP2012**, AF4C.7, Guangzhou, China. (EI: **Postdeadline paper**)
- [34] **Hui Yang**, Yadi Cui, Jie Zhang, “Unified Multi-Layer among Software Defined Multi-Domain Optical Networks (**Invited**),” **Electronics**, vol. 4, no. 2, pp. 329-338, 2015. (doi:10.3390/electronics4020329)
- [35] **Hui Yang**, Jie Zhang, Yongli Zhao, Yuefeng Ji, Jianrui Han, Yi Lin, Shaofeng Qiu, Young Lee, “Time-aware Software Defined Networking for OpenFlow-based Datacenter Optical Networks,” **Network Protocols and Algorithms**, **Invited**, vol. 6, no. 4, pp. 77-91, 2014.

- [36] **Hui Yang**, Yongli Zhao, Shanguo Huang, et al., “Multiple-Constraint-Aware RWA Algorithms based on a Comprehensive Evaluation Model: Use in Wavelength-Switched Optical Networks,” *ZTE Communications*, vol. 10, no. 3, pp. 55-61, 2012.
- [37] Jie Zhang, **Hui Yang**, Yongli Zhao, Yuefeng Ji, Hui Li, Yi Lin, Gang Li, Jianrui Han, Young Lee, and Teng Ma, “Experimental demonstration of elastic optical networks based on enhanced software defined networking (eSDN) for data center application,” **Optics Express**, vol. 21, no.22, pp. 26990-27002, Oct. 2013. (SCI)
- [38] Jiawei Zhang, Jie Zhang, Yongli Zhao, **Hui Yang**, et al., “Experimental demonstration of OpenFlow-based control plane for elastic lightpath provisioning in Flexi-Grid optical networks,” **Optics Express**, vol. 21, no. 2, pp. 1364-1373, Jan. 2013. (SCI)
- [39] Yongli Zhao, Ruiying He, **Hui Yang**, Ahmed Muddassir Khan, Jie Zhang, “Data center application oriented control architecture in multi-domain optical networks,” *International Journal for Light and Electron Optics (Optik)*. (SCI)
- [40] Jie Zhang, Yongli Zhao, **Hui Yang**, “Software Defined Networking: from Dynamic Lightpath Provisioning to Optical Virtualization,” OECC/ACOFT 2014, China. (EI: **Invited Paper**)
- [41] Jie Zhang, Yongli Zhao, **Hui Yang**, Yuefeng Ji, Hui Li, Yi Lin, Gang Li, Jianrui Han, Young Lee and Teng Ma, “First Demonstration of enhanced Software Defined Networking (eSDN) over elastic Grid (eGrid) Optical Networks for Data Center Service Migration,” **OFC/NFOEC2013, PDP5B.1**, 2013, Anaheim, US. (EI: **Postdeadline paper**)
- [42] Yongli Zhao, **Hui Yang**, Jiawei Zhang, Jie Zhang, Yi Lin and Young Li, “Experimental Demonstration of Optical as a Service (OaaS) based on OpenFlow,” **OECC2012, PDP1-4**, July 2012, Busan, Korea. (EI: **Postdeadline paper**)
- [43] Yongli Zhao, Jie Zhang, **Hui Yang**, Xiaosong Yu, “Data Center Optical Networks (DCON) with OpenFlow based Software Defined Networking (SDN),” *Chinacom 2013*, Aug. 2013, Guilin, China. (EI: **Invited paper**)
- [44] Yongli Zhao, Jie Zhang, **Hui Yang**, Yiming Yu, Xiaobing Niu and Xuefeng Lin, “Which Is More Suitable for the Control over Large Scale Optical Networks, GMPLS or OpenFlow?” **OFC/NFOEC2013, NTu3F.2**, Mar 2013, Anaheim, US. (EI: **Oral Presentation**)

Reviewer:

Active reviewer for several international journals, and I have previously reviewed more than 30 manuscripts in the following journals.

- IEEE Communications Magazine (IEEE)
- IEEE/OSA Journal of Lightwave Technology (IEEE and OSA)
- IEEE/OSA Journal of Optical Communications and Networking (IEEE and OSA)
- IEEE Communications Letters (IEEE)
- Computer Networks (Elsevier)
- Optical Fiber Technology (Elsevier)
- Optics Communications (Elsevier)
- Optics Engineering (Elsevier)
- Photonic Network Communications (Springer)
- Network Protocols and Algorithms