Peilong Li

Dr. Peilong Li's curiculum vitae

Scholarly Impact and Highlights

Grants
Co-PI of Intel Academic Fund 2019 (2020- $499,999);
Co-PI of Intel Academic Fund 2018 (2018-2019 $499,999);
Co-PI of NSF CICI:RSARC #1738965 (2017-2020 $999,651);
Entrepreneur Lead of NSF I-Corps: #1823766 (2018 Apr-Sept $50,000)

Grant Writing Experience
Intel Academic Grant, 2017;
NSF CICI #1547428 (2016-2018 $515,858);
Entrepreneur Lead of NSF I-Corps #1530989 (2015 Apr-Sept $50,000)

Employment History

July 2018–
Assistant Professor, *Elizabethtown College*,
One Alpha Dr, Elizabethtown PA 17022, USA.
Department of Computer Science

May 2017–June 2018
Research Assistant Professor, *University of Massachusetts Lowell*,
One University Ave, Lowell MA 01854, USA.
Department of Electrical and Computer Engineering

May 2016–May 2017
Post-Doctoral Research Associate, *University of Massachusetts Lowell*,
One University Ave, Lowell MA 01854, USA.
Department of Electrical and Computer Engineering,
Advanced Computing and Networking Systems (ACANETS) Laboratory (link)

Jan 2016–April 2017
Lecturer, *University of Massachusetts Lowell*,
One University Ave, Lowell MA 01854, USA.
Department of Electrical and Computer Engineering,
EECE.2160 Application Programming (link)

May 2015–Sep 2015
Internship Research Scientist, *Podium Data, Inc.*,
116 John Street, Suite 300, Lowell MA 01854, USA.
Project: Pig on Spark - accelerate Apache Pig applications with Apache Spark.

2011–2016
Research Assistant, *University of Massachusetts Lowell*,
One University Ave, Lowell MA 01854, USA.
Department of Electrical and Computer Engineering,
Advanced Computing and Networking Systems (ACANETS) Laboratory

2011–2015
Teaching Assistant, *University of Massachusetts Lowell*,
One University Ave, Lowell MA 01854, USA.
Department of Electrical and Computer Engineering,
EECE.3170 Microprocessors I and EECE.4800 Microprocessors II

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https://peilong.github.io • *http://github.com/Peilong*

Education

2011–2015 **Ph.D., Computer Engineering**, *University of Massachusetts Lowell*, Lowell, MA, USA.
Dissertation: Heterogeneous Architecture for Big Data Analytics
Committee: Dr. Yan Luo, Dr. Yu Cao, Dr. Martin Margala, and Dr. Seung Woo Son
GPA: 3.85/4.0

2007–2011 **BS, Electrical Engineering**, *Qingdao University of Science and Technology*, Qingdao, Shandong, China.
GPA: 95/100

Grant Proposal Experience

Intel Academic Grant 2018 **Co-PI and major proposal contributor**: *Machine Learning Based Encrypted Network Traffic Analysis on Intel Processors.*
Year: Aug. 2018 - Aug. 2019

NSF I-Corps **Entrepreneur Lead and proposal contributor**: *Embedded Machine Vision for Accurate Gait Analyses and Body Movement Measurements.*
Award number: NSF #1823766
Year: Apr. - Sept., 2018
Amount: share $3,000 out of $50,000.00

NSF 17-528 CICI **Co-PI and major proposal contributor**: CICI: RSARC: *SECTOR: Building a SEcure and Compliant Cyberinfrastructure for Translational Research.*
Award number: NSF #1738965
Year: 2017-2019
Amount: share $80,000 out of $999,651.00

Intel Academic Grant 2017 **Major proposal contributor**: *Accelerating P4 Based Data Plane with Vector Packet Processing.*
Year: Apr. 2017 - Apr. 2018

NSF 16-533 CICI **Proposal contributor**: CICI: Secure Data Architecture: *STREAMS: Secure Transport and REsearch Architecture for Monitoring Stroke Recovery.*
Award number: NSF #1547428

NSF I-Corps **Entrepreneur Lead and proposal contributor**: *SDNatics: Big Data Analytics of Software Defined Networks to Understand, Predict and Protect Critical Computer Networks.*
Award number: NSF #1530989

Honor & Awards

May 2018 **NSF Aspiring CSR PIs Workshop Travel Grant**: For travel expenses on attending the National Science Foundation PIs workshop.
Amount: $800.00

May 2016 **Outstanding Graduate Student 2016**: Francis College of Engineering, University of Massachusetts Lowell.

Sep. 2016 **ACM ANCS 2016 Travel Award**: For travel expenses on attending ACM Architectures for Networking and Communications Systems Conference (ANCS).
Amount: $750.00

Aug. 2015 **IEEE NAS 2015 Travel Award**: For travel expenses on attending IEEE Networking, Architecture, and Storage Conference (NAS).
Amount: $850.00

2014 **GENI Travel Award**: For travel expenses on attending GENI Engineering Conference.
Amount: $1,500.00

Professional service

Session Chair ACM International Workshop on Security in Software Defined Networks & Network Function Virtualization

Committee IEEE International Conference on Omni-layer Intelligent systems (COINS'2020)

Committee The 50th ACM Technical Symposium on Computer Science Education

Committee The 5th International Conference on Artificial Intelligence and Security (ICAIS'2019)

Committee The Fourteenth International Conference on Networking and Services (ICNS'18)

Reviewer ACM Technical Symposium on Computer Science Education

Reviewer IEEE Transactions of Parallel and Distributed System (IPDPS)

Reviewer IEEE Transaction on Communications

Reviewer IEEE Transaction on Service Computing

Reviewer IEEE Communication Letters

Reviewer IFIP/IEEE International Symposium on Integrated Network Management

Reviewer Journal of Computer Science Applications and Information Technology

Reviewer International Journal of Distributed Sensor Networks

Reviewer MDPI Open Access Journals – Electronics

Publications

[1] P. Li, C. Xu, H. Jin, C. Hu, Y. Luo, Y. Cao, J. Mathew, and Y. Ma. Chainsdi: A software-defined infrastructure for regulation-compliant home-based healthcare services secured by blockchains. *IEEE Systems Journal*, pages 1–12, 2019. doi:10.1109/JSYST.2019.2937930.

[2] Hao Jin, Yan Luo, Peilong Li, and Jomol Mathew. A review of secure and privacy-preserving medical data sharing. *IEEE Access*, 7:61656–61669, 2019. doi:10.1109/ACCESS.2019.2916503.

[3] Yan Luo, Hao Jin, and Peilong Li. A blockchain future for secure clinical data sharing: A position paper. In *Proceedings of the ACM International Workshop on Security in Software Defined Networks & Network Function Virtualization*, SDN-NFVSec '19, pages 23–27, New York, NY, USA, 2019. ACM.

[4] Chen Xu, Peilong Li, and Yan Luo. A programmable policy engine to facilitate time-efficient science dmz management. *Future Generation Computer Systems*, 89:515 – 524, 2018. doi:https://doi.org/10.1016/j.future.2018.07.016.

[5] Yongyi Ran, Xiaoban Wu, Peilong Li, Chen Xu, Yan Luo, and Liang-Min Wang. Equery: Enable event-driven declarative queries in programmable network measurement. In *IEEE/IFIP Network Operations and Management Symposium (NOMS'18)*, pages 1–7, Taipei, Taiwan, April 2018.

[6] Peilong Li, Xiaoban Wu, Yan Luo, Liang min Wang, Marc Pepin, Atul Kwatra, and John Morgan. Bmacc: Accelerating p4-based data plane with dpdk. In *DPDK Summit San Jose 2017*, November 2017.

[7] Chen Xu, Peilong Li, and Yan Luo. A programmable policy engine to facilitate time-efficient science dmz management. In *Innovating the Network for Data-Intensive Science*, INDIS '17, Denver, Colorado, 2017.

[8] Peilong Li, Xiaoban Wu, Yongyi Ran, and Yan Luo. Designing virtual network functions for 100 gbe network using multicore processors. In *Proceedings of the Symposium on Architectures for Networking and Communications Systems*, pages 49–59, Beijing, China, May 2017. IEEE Press.

[9] Xiaoban Wu, Peilong Li, Yongyi Ran, and Yan Luo. Network measurement for 100 gbe network links using multicore processors. *Future Generation Computer Systems*, pages –, 2017. doi:https://doi.org/10.1016/j.future.2017.04.038.

[10] Yongyi Ran, Xiaoban Wu, Peilong Li, and Yan Luo. Dynamic virtual measurement function scheduling in software-oriented measurement environment. In *2017 IEEE International Conference on Communications (ICC)*, ICC '17, pages 1–6, Paris, France, May 2017.

[11] Peilong Li, Chen Xu, Yan Luo, Cao Yu, Jomol Mathew, and Yunsheng Ma. CareNet: building regulation-compliant home-based healthcare services with software-defined infrastructure. In *2017 the IEEE 2nd International Conference on Connected Health: Applications, Systems and Engineering Technologies (IEEE CHASE 2017)*, Washington D.C., USA, July 2017.

[12] Peilong Li, Chen Xu, Yan Luo, Yu Cao, Jomol Mathew, and Yunsheng Ma. Carenet: Building a secure software-defined infrastructure for home-based healthcare. In *Proceedings of the ACM International Workshop on Security in Software Defined Networks; Network Function Virtualization*, SDN-NFVSec '17, pages 69–72, New York, NY, USA, 2017. ACM.

[13] Peilong Li, Xiaoban Wu, Yan Luo, Liang min Wang, Nancy Yadav, Marc Pepin, and John Morgan. Numaware: Accelerate vm-to-vm i/o performance in numa servers for nfv applications. In *2016 IEEE Conference on Network Function Virtualization and Software Defined Networks*, SDN-NFV '16, Palo Alto, CA, Nov 2016.

[14] Xiaoban Wu, Peilong Li, Yongyi Ran, and Yan Luo. Network measurement for 100gbps links using multicore processors. In *Inovating the Network for Data-Intensive Science*, INDIS '16, Salt Lake City, Utah, 2016.

[15] Peilong Li and Yan Luo. P4GPU: acceleration of programmable data plane using a CPU-GPU heterogeneous architecture. In *2016 IEEE 17th International Conference on High Performance Switching and Routing (HPSR)*, IEEE HPSR '16, pages 168–175, Yokohama, Japan, July 2016.

[16] Peilong Li and Yan Luo. P4gpu: Accelerate packet processing of a p4 program with a cpu-gpu heterogeneous architecture. In *Proceedings of the 2016 Symposium on Architectures for Networking and Communications Systems*, ANCS '16, pages 125–126, New York, NY, USA, 2016. ACM.

[17] Peilong Li and Yan Luo. P4gpu: Mapping a p4 program onto a cpu-gpu heterogeneous architecture for acceleration. In *Boston Area Architecture Annual Workshop*, BARC '16, 2016.

[18] Peilong Li, Tyler Alterio, Swaroop Thool, and Yan Luo. Mapping a p4 program onto gpu target architecture. In *2nd P4 Workshop by Stanford/ONRC*, November 2015.

[19] Peilong Li, Yan Luo, Ning Zhang, and Yu Cao. Heterospark: A heterogeneous cpu/gpu spark platform for machine learning algorithms. In *IEEE International Conference on Networking, Architecture and Storage*, NAS '15, pages 347–348, Aug 2015.

[20] Peilong Li, Yan Luo, and Jun Yang. Transformer: Run-time reprogrammable heterogeneous architecture for transparent acceleration of dynamic workloads. *Journal of Parallel and Distributed Computing*, 86:45 – 61, 2015. doi:http://dx.doi.org/10.1016/j.jpdc.2015.08.002.

[21] Peilong Li, Yan Luo, Yu Cao, and Ning Zhang. Heterospark: A heterogeneous cpu/gpu spark platform for machine learning algorithms. In *Apache Spark Summit East 2015*, March 2015.

[22] Peilong Li and Yan Luo. Gpu-accelerated network anomaly detection. In *Advanced Cyber Security Center Forum*, April 2015.

[23] Peilong Li, Xiaobing Huang, Tian Zhao, Yan Luo, and Yu Cao. Sparkling: Identification of task skew and speculative partition of data for spark applications. In *Spark Summit 2014*, June 2014.

[24] Peilong Li, Yan Luo, Thomas Calloway, and Mohammad Imran Vikal. Exploration of memory hierarchy of heterogeneous architecture with accelerators. In *3rd Workshop on SoCs, Heterogeneous Architectures and Workloads*, SHAW '12, 2012.

[25] W. Zhao, J. Zhang, P. Li, and Y. Li. Study of image segmentation algorithm based on textural features and neural network. In *Intelligent Computing and Cognitive Informatics (ICICCI), 2010 International Conference on*, pages 300–303, June 2010.