Cheng Li

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EDUCATION

College of William and Mary (GPA 4.0/4.0)   *Aug. 2013 - Present*
PhD candidate in Computer Science Department
Harbin Institute of Technology (GPA rank: 6/184)   *Aug. 2011 – Jul. 2013*
Master of Engineering in Computer Science
Nankai University (GPA rank: 1/84)   *Sept. 2007 – Jul. 2011*
Bachelor of Engineering in Computer Science

EXPERTISE

- ➢ Excellent in Python, Java, C and C++.
- ➢ Excellent in machine learning concepts.
- ➢ Proficient with Recommendation System. Have the experience of designing and implementing large recommendation system.
- ➢ Excellent in network programming. Have the experience of developing network applications, such as Web server, SMTP server and so on.
- ➢ Proficient with Software-defined networking. Familiar with OpenFlow protocol, Floodlight SDN controller, Open vSwitch and Mininet SDN simulator.
- ➢ Familiar with network security attacks, especially DDoS attacks, man-in-the-middle attacks. Have the experience of implementing ARP spoofing attack (in both C and Python).

MAJOR RESEARCH & PROJECT

Recommendation System in Instagram   *June 2018 – Aug. 2018*
Implemented a recommendation system with a new sourcing framework in Instagram. I was responsible for *Video You Might Like* section in **Instagram Explore** page. This project includes designing sourcing query, training ranking models, tuning value models and adding new video-state-based features.

Twitter Latent Space Inference   *Sept. 2016 – May 2017*
Use machine learning techniques to extract user latent space in social network. This project is written in both Matlab and Python. I was responsible for algorithm implementation and experiments parts. **This project has been reported by the Associate Press**. Please check here. This paper has been accepted by *NIPS 2017*.

Scheduling Algorithm in Distributed SDN Controllers   *June. 2016 - Present*
I built up a policy update model in distributed SDN controllers and proposed both optimal and heuristic algorithms for efficiently update policies in SDN while keeping per-packet consistency and fairness. I simulated the heuristic algorithm using Python. This is a work under submission.

OpenFlow Channel Security   *Nov. 2015 – Nov. 2016*
I implemented several man-in-the-middle attack demos (written in Python) in the OpenFlow channel, and a countermeasure of such attack by extending the OpenFlow protocol (Java on Floodlight controller, C on OVS side). This paper has been published at IEEE IoT Journal.

PUBLICATION

- ➢ Cheng Li, Varun Kanade, Felix Ming Fai Wong, Zhenming Liu. "From which world is your graph?" *NIPS 2017*
- ➢ Cheng Li, Zhengrui Qin, Ed Novak, Qun Li. "Securing SDN Infrastructure of IoT-Fog Networks from MitM Attacks" *IEEE IoT Journal*.
- ➢ Cheng Li, Qun Li, Zijiang Hao. "High Efficiency Scheduling Scheme for Distributed SDN Controllers in IoT" (under submission)
- ➢ Nancy Carter, Ed Novak, Cheng Li, Zhengrui Qin, and Qun Li. "Graphical Passwords for Older Computer Users." *ACM UIST 2015*.
- ➢ Shanhe Yi, Cheng Li, and Qun Li. "A Survey of Fog Computing: Concepts, Applications, and Issues" *ACM Workshop on Mobile Big Data, 2015*.

EXPERIENCE

- ➢ **Software Engineer Intern at Instagram Explore Team, FBNY**   *June. 2018 – Aug. 2018*
- ➢ TA of Finite Automata, Computer Organization and Computational Problem Solving, W&M   *Aug. 2013 – Present*
- ➢ Research Assistant of Prof. Qun Li, W&M   *Jun. 2015 – Present*
- ➢ President of Chinese Student and Scholar Association, W&M   *Aug. 2014 – Jul. 2015*

AWARDS

- ➢ NIPS Travel Grant   *Oct. 2017*
- ➢ Graduate student research grant, W&M   *Sept. 2017*
- ➢ Graduate student association conference travel grant, W&M   *Sept. 2017*
- ➢ Northrop Grumman Corporation Award on the natural and computational sciences, 16th Graduate Research Symposium, W&M   *Mar. 2017*