Curriculum Vitae - Xianglong Feng

CONTACT INFORMATION

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EDUCATION

Rutgers, the State University of New Jersey — May 2021 (anticipated)
Ph.D. in Electrical and Computer Engineering

Chinese Academy of Sciences — July 2015
M.S. in Computer Application Technology

China University of Petroleum — July 2012
B.S. in Communication Engineering

RESEARCH SUMMARY

My research has been focused on the ***multimedia system***, including improving the ***user experience quality*** and resolving the ***security*** issues in a bottom-up method. I have a solid research background with ***machine learning***, ***computer vision***, ***embedded system***, ***hardware security***, ***mobile computing***, ***VR/AR*** and ***HCI***. More specifically, I have conducted research projects including:

- Viewport prediction for live Virtual Reality video streaming using deep video content analysis and user feedback.
- Improving the privacy and security of multimedia system following a bottom-up approach, from the low-level hardware security of the heterogeneous platform to the upper-level software algorithm (e.g. machine learning).

Besides, during my internship, I extend my research areas and focus on the problems of the ***next generation wireless communication (6G),*** using AI to solve the complicated parameters estimation of large intelligent surface. Furthermore, I am conducting research to bridge the gap between the next generation wireless communication network and the emerging multimedia system. Here is my professional summary:

- 8 peer-reviewed publications and 6 academic presentations.
- 2 undergraduate research grants.
- 2.5-year teaching experience honored with Best Teaching Assistant Award.

PROFESSIONAL EXPERIENCE

Research Intern — May 2020 – August 2020
Futurewei, Wireless Communication Lab

Graduate Research Assistant — September 2018 – Present
Rutgers University – New Brunswick, Department of Electrical and Computer Engineering

Graduate Research Assistant — August 2016 – August 2018
University of Nebraska – Lincoln, Department of Computer Science and Engineering

Graduate Research Assistant — August 2015 – May 2016
Missouri University of Science and Technology, Department of Computer Science

Graduate Research Assistant — August 2013 – May 2015
Chinese Academy of Sciences, National Science Space Center

PUBLICATIONS

Sheen B, Yang J, ***Xianglong Feng***, Chowdhury, M. “A Deep Learning Based Modeling of Reconfigurable Intelligent Surface Assisted Wireless Communications for Phase Shift Configuration [J]”. IEEE Open Journal of the Communications Society (**OJ-COMS**), 2021.

Xianglong Feng, Zeyang Bao, Sheng Wei, “LiveObj: Object Semantics-based Viewport Prediction for Live Mobile Virtual Reality Streaming.” IEEE Conference on Virtual Reality and 3D User Interfaces (**IEEE VR**), Journal Track, March 2021.

Xianglong Feng, Mengmei Ye, Ke xia, Sheng Wei, “Runtime Fault Injection Detection for FPGA-based DNN Execution Using Siamese Path Verification.” Design, Automation and Test in Europe (**DATE**), February 2021.

Sheen B, Yang J, ***Xianglong Feng***, Chowdhury, M. “A Digital Twin for Reconfigurable Intelligent Surface Assisted Wireless Communication[J]”. arXiv preprint arXiv:2009.00454, 2020.

Zhongze Tang, ***Xianglong Feng,*** Yi Xie, Huy Phan, Tian Guo, Bo Yuan, Sheng Wei, “VVSec: Securing Volumetric Video Streaming via Benign Use of Adversarial Perturbation”, ACM Multimedia Conference (**MM**), October 2020.

Xianglong Feng, Yao Liu, Sheng Wei, “LiveDeep: Online Viewport Prediction for Live Virtual Reality Streaming Using Lifelong Deep Learning IEEE Conference on Virtual Reality and 3D User Interfaces (**IEEE VR**), March 2020

Xianglong Feng, Zeyang Bao, Sheng Wei, “Exploring CNN-based Viewport Prediction for Live Virtual Reality Streaming”. IEEE International Conference on Artificial Intelligence and Virtual Reality (**AIVR**), December 2019

Mengmei Ye**,** ***Xianglong Feng*****,** Sheng Wei, “Runtime Hardware Security Verification Using Approximate Computing: A Case Study on Video Motion Detection”. Asian Hardware Oriented Security and Trust Symposium (**AsianHOST**), December 2019.

Xianglong Feng, Viswanathan Swaminathan, Sheng Wei, “Viewport Prediction for Live 360-Degree Mobile Video Streaming Using User-Content Hybrid Motion Tracking.” Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (**IMWUT**)/(**Ubicomp 19**), 3, 2, Article 43, 22 pages, June 2019.

Mengmei Ye, ***Xianglong Feng***, Sheng Wei, “HISA: Hardware Isolation-based Secure Architecture for CPU-FPGA Embedded Systems.” International Conference On Computer Aided Design (**ICCAD**), Article No. 90, November 2018.

Xianglong Feng, Mengmei Ye, Viswanathan Swaminathan, Sheng Wei, “Towards the Security of Motion Detection-based Video Surveillance on IoT Devices.” ACM Multimedia Conference - Thematic Workshop, October 2017.

Xianglong Feng, Benjie Wei, Xiujie Jiang. “Design of Video Capture and Codec based on DM368.”, Electronic Design Engineering, June 2015

RESEARCH GRANTS

(Undergraduate) Large distance repeater for walkie talkie using VOIP. National University Student Innovation Program, 2010, $1500. Role: PI

(Undergraduate) Smart sensing for modem greenhouse agriculture. College Student Innovation Program, 2009, $300. Role: Co-Investigator

Contribute ideas and preliminary results to my advisor’s research grant, “***Content-Based Viewport Prediction Framework for Live Virtual Reality Streaming***”, ***awarded by NSF*** starting from August 2019.

PRESENTATIONS

Oral presentation

- "LiveDeep: Online Viewport Prediction for Live Virtual Reality Streaming Using Lifelong Deep Learning."
- "Towards the Security of Motion Detection-based Video Surveillance on IoT Devices." ACM Multimedia Conference - Thematic Workshop, October 2017.

Poster Presentation

- "Exploring CNN-based Viewport Prediction for Live Virtual Reality Streaming." IEEE AIVR 2019
- "Exploring CNN-based Viewport Prediction for Live Virtual Reality Streaming" Annual Research Day, Department of Electrical and Computer Engineering, Rutgers University, December 2019.
- "Viewport Prediction for Live 360-Degree Mobile Video Streaming Using User-Content Hybrid Motion Tracking." Annual Research Day, Department of Electrical and Computer Engineering, Rutgers University, December 2018.
- "Towards the Security of Motion Detection-based Video Surveillance on IoT Devices." ACM Multimedia Conference - Thematic Workshop, October 2017.

TEACHING EXPERIENCE

Graduate Teaching Assistant
Rutgers University – New Brunswick, Department of Electrical and Computer Engineering

- **Digital System Design**
  - Fall 2020 (**Lead TA**, 123 students in lecture section, and 75 students in lab section)
  - Fall 2019 (**Lead TA**, 145 students in lecture section, and 90 students in lab section)
  - Fall 2018(**Lead TA**, 161 students in lecture section, and 102 students in lab section)
- **Software Engineering**
  - Spring 2019 (The only TA, 134 students)
- **Computer Architecture and Assembly Code**
  - Spring 2020 (42 students in the lecture and lab section)

ACCOMPLISHMENTS AND AWARDS

Best Teaching Assistant Fall 2018

- ECE graduate program academic achievement award, Rutgers University.

Academic achievement award 08/2015-12/2015

- For achieving GPA 4.0. Missouri University of Science and Technology.

Qilu Software Design Contest: First Prize 08/2010-09/2010

- China University of Petroleum.

National Electronic Design Contest: Third Prize 08/2009-09/2009

- China University of Petroleum.

Scholarship for academic achievement ×2 09/2009-09/2010

- China University of Petroleum.

Scholarship for innovation in science and technology ×2 09/2009-09/2010

- Award for academic competition, China University of Petroleum.

SERVICES

President of the Radio Association 06/2009-06/2010
China University of Petroleum