Hongxiang Gu

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Education

University of California Los Angeles | Los Angeles, CA
Ph.D. Computer Science September 2014 - June 2019
M.S. Computer Science September 2014 - June 2018
- Research Advisor: Professor Miodrag Potkonjak
- Research Focus: **IoT, Hardware Security, Machine Learning,**

University of California Los Angeles | Los Angeles, CA
B.S Computer Science September 2010 - March 2014
- Dean's Honor List (Spring 2011, Fall 2011, Fall 2012)
- Social Chair of Upsilon Pi Epsilon: Computer Science honor society (2013-2014)

Work Experience

Adobe Research | San Jose (June 2018 – Sept 2018)
Research Scientist Intern
- Purpose a novel intelligent video summarization and highlight generation method using imitation learning.
- Build a video editorial templates learning framework from expert demonstrations.

Adobe Research | San Jose (June 2017 – September 2017)
Data Science Research Intern
- Intelligent Summarization and understanding of video advertisements.
- Build a service to smartly edit video ads to fit platforms requirements.
- Create an unsupervised, multi-purpose video summarizer using generative deep neural networks.

Adobe Research | San Jose (June 2015 – September 2015)
Research Intern
- Investigate secure video streaming service on ARM-based systems for Adobe Primetime.
- Build a prototype to provide secure HD video streaming services on mobile platforms using TrustZone technology.
- Create a secure video playback path using Intel SGX technology.

Yahoo! | Sunnyvale, CA (June 2013 – September 2013)
Software Development Engineer Intern, Search team
- Design and built the prototype for hyperlocal trend detection.
- Design a tool to understand and model user search behavior based on very-large-scale historical search queries.
- Redesign and customize Yahoo's existing Popnow module to generate trend prediction.
- Create a hyperlocal experience recommendation system.

Publications

- J. Guo, **H. Gu**, M. Potkonjak. "Efficient Image Sensor Subsampling for DNN-Based Image Classification". ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), 2018.
- **H. Gu**, M. Potkonjak. "Efficient and Secure Group Key Management in IoT using Multistage Interconnected PUF". ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), 2018. (Oral presentation)
- J. Guo, **H. Gu**, M. Potkonjak. "Efficient Image Sensor Subsampling for DNN-Based Image Classification". ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), 2018.
- **H. Gu**, V. Swaminathan. "From Thumbnails to Summaries - A Single Deep Neural Network to Rule Them All". IEEE International Conference on Multimedia and Expo (ICME), 2018.
- **H. Gu**, M. Potkonjak. "Securing Interconnected PUF Network with Reconfigurability." IEEE International Symposium on Hardware-Oriented Security and Trust (HOST), 2018.
- **H. Gu**, T. Xu, M. Potkonjak, "A low-power APUF-based environmental abnormality detection framework." ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), 2017. (Oral presentation)
- T. Xu, **H. Gu**, M. Potkonjak, "An Ultra-Low Energy PUF Matching Security Platform Using Programmable Delay Lines," International Symposium on Reconfigurable Communication-centric Systems-on-Chip (ReCoSoC), 2016.
- **H. Gu**, T. Xu, M. Potkonjak, "An Energy-Efficient PUF Design: Computing While Racing," ACM/IEEE International Symposium on Low Power Electronics and Design (ISLPED), 2016. (Oral presentation)
- T. Xu, **H. Gu**, M. Potkonjak, "Data Protection Using Recursive Inverse Function," International Conference on Field Programmable Logic and Applications (FPL), 2015.

Fellowship, Grants and Awards

- **Venky Harinarayan Fellowship** – 2014
- **IEEE International Symposium on Hardware Oriented Security and Trust Student Travel Grant** - 2018

Patents

- Generating Digital Video Summaries Utilizing Aesthetics, Relevancy, and Generative Neural Networks - 2018

Professional Services

- Reviewer – 2019 International Conference on Computer Aided Design (ICCAD)
- Reviewer – Transactions on Design Automation of Electronic Systems (TODAES) – Dec. 2018, Feb, 2019
- Reviewer – Transactions on Computer-Aided Design of Integrated Circuits and Systems (TCAD) - Dec 2018, Jan, 2019
- Reviewer – 2018 International Conference on Computer Aided Design (ICCAD)
- Reviewer – 2018 Cyber Science and Technology Congress (CyberSciTech)

Teaching experience

- Introductory Digital Design Laboratory, UCLA, 2015
- Introductory Digital Design Laboratory, UCLA, 2016
- Introductory Digital Design Laboratory, UCLA, 2017
- Introductory Digital Design Laboratory, UCLA, 2018