# Shengrong Yin

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**Objective**

Seeking an internship position which can explicitly utilize my programming and computer skills to solve stimulating problems in wireless and embedded systems.

**Technical Skills**

**Embedded Systems:** Experience with C/C++ on MSP430, AVR and ARM architectures for control and signal processing including Arduino, Raspberry Pi, BeagleBone, OpenWRT, TinyOS and Contiki. Experience with PCB design for embedded system using Eagle.
**Wireless Communication:** Experience with 802.11bgn, 802.15.4, 6LowPAN and TCP/IP protocol. Proficiency in data collection, analysis and visualization. Proficiency in signal processing, synthesis and analysis programs developed in Python and Matlab.
**Scientific Writing:** Experience with Git, LaTeX, Google Docs and MS Office.

**Relevant Projects**

**Interconnecting 802.11 Devices to 802.15.4 Devices without Gateway**
Designed and implemented a WiFi to IEEE 802.15.4 sensor nodes communication system based on OpenWRT and TinyOS without using a gateway. Designed a new modulation and demodulation scheme based on two different physical layers. Experimented and analyzed the wireless channel performance for both 802.11 and 802.15.4.
**Prototyping Wearable Device for Real Dancing Performance**
Designed and implemented a novel wearable device for dancers to capture and synchronize their dancing performance. Developed a new primitive to help synchronizing multiple dancers using timestamped accelerometer. Programmed and analyzed current commercial smart watch for accelerometer data acquisition, such as Samsung Gear, Pebbel and Android Wear.
**Twonet: Large-Scale Wireless Sensor Network Testbed with Dual-Radio Nodes**
Developed a system for dual band wireless sensor network to procure and analyze the wireless connectivity simultaneously. Built and debugged a distributed system for wireless sensor network testbed with servers, proxies and sensor nodes utilizing Python, Shell scripts based on Ubuntu 13.04; Validated and enabled a wireless sensor network testbed - Twonet to make it public for the academia usage.
**Pace at Which US Government Can Update its Websites**
Collected a list of top 500 government websites from Alexa Top Sites service. Investigated how soon US government can update their websites during the shutdown event using Shell and Python scripts.
**BeagleBone Cape for Visual Light Communication**
Designed and Implemented a BeagleBone Cape for a visual light communication system. Created a new network interface in BeagleBone for the enabled visual light communication.
**TelosC Platform for TinyOS**
Created a new platform with MSP430 and CC1101 for TinyOS. Experimented and Implemented CC1101 radio stack based on TinyOS.

**Education**

**Ph.D. student** in Computer Science 08/2013-now
University of Houston, Houston, TX, USA. Advisor: Prof. Omprakash Gnawali.
**M.S.** in Communication and Information System 06/2013
Wuhan University of Technology, Wuhan, China
**B.S.** in Communication Engineering 06/2011
Wuhan University of Technology, Wuhan, China

**Internship**

**IBM**
Designed and implemented automated and manual test cases for the deployment of IBM cloud services using IBM Rational Application Developer and bash scripts. 02/2013-05/2013

**Selected Publications**

**Shengrong Yin**, O. Gnawali, P. Sommer and B. Kusy: *Multi Channel Performance of Dual Band Low Power Wireless Network*. In Proceedings of the 11th IEEE International Conference on Mobile Ad-hoc and Sensor Systems (IEEE MASS 2014).
**Shengrong Yin**, O. Gnawali, P. Sommer and B. Kusy: *Poster Abstract: Concurrent Wireless Channel Survey on Dual Band Sensor Network Testbed*. In Proceedings of the 11th IEEE International Conference on Mobile Ad-hoc and Sensor Systems (IEEE MASS 2014).

**Patents**

**CN102322857B(granted)**
"Position and posture measuring system and method for mechanical equipment", designed and implemented an adaptive navigating system for road header underground using C/C++. 2011