# Ruolan (Vera) Xu

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## EDUCATION

**Duke University**, Durham, NC                                                                    **Sept 2013- May 2017**
B.S. Electrical and Computer Engineering, B.S. Biomedical Engineering, Computer Science Minor
Major GPA: 3.88/4.00, Cumulative GPA: 3.64/4.00
- **Relevant Courses:** Operating System and Computer Architecture, Data Structure and Algorithms, Computational Genomics, Medical Device Software Design, Robotics and Automation, Digital Systems, Microelectronic Devices and Circuits
- **Programming Language**: Java, C/C++, Python, JavaScript, AngularJS, MIPS, Verilog, Arduino

**IXperience, Study Abroad**, Cape Town, South Africa                                             **June 2016- Aug 2016**
- Web Development Course: 4-week intensive course on AngularJS, HTML and CSS.
- Portfolio Projects: experience with Google Firebase, Bootstrap and mobile-responsive design.
    - Personal website: veraxrl.github.io
    - Tension: built a Firebase-based online platform for IXperience staffs to share data and collaborate via live messages

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## WORK EXPERIENCE

**Full-Stack Developer, Musci, Boston, MA**                                                       **June 2016- Present**
*www.musci-man.com* **AngularJS, YouTube & SoundCloud API, Google Firebase database**
- Developed audio-based live streaming platform that retrieves media from YouTube and SoundCloud, with the ability to create personalized playlists and integrate multi-sourced audio within a single playlist
- Used Google Firebase for data storage, AngularJS for web development

**Undergraduate Research Fellow, Bergin Sensor Lab, Durham, NC**                                  **May 2016-Present**
- Designed and implemented the data transmission process for a Photon Wifi Air Quality Sensor Package, which performed serialized messages parsing following sensor-specific communication protocols, checksum validation and data post-processing.
- Currently configuring Photon microcontroller with Duke encrypted Wifi and incorporating data packages with R-based server
- Package was pilot studied in Beijing, China this summer and will be professionally manufactured and deployed in January, 2017

**Web Software Developer – Raw Catering Co., Cape Town, South Africa**                            **June 2016-Aug 2016**
*www.rawcatering.co.za*, **AngularJS, Google Firebase, APIs, HTML, CSS**
- Designed and implemented a dynamic single-paged website, with multimedia streaming and user enquiry management
- Use Facebook, Google Map, Instagram and YouTube API to retrieve live social media feeds and create interactive user experience

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## PROJECT EXPERIENCE

**Heap Memory Manager Project, Duke University**                                                  **Aug 2016-Sept 2016**
- Implemented a heap manager in C to dynamically allocate, free and coalesce blocks of heap memory space, with data structures such as doubly-linked lists and block metadata header

**Instamood Project, IXperience, Cape Town, South Africa**                                        **July 2016-Aug 2016**
- Implemented a web-crawler that retrieves post-related information using Instagram API, to perform mood assessment based on Instagram posts with Sentiment API using word-paring and statistical analysis

**The FitBrick Pedometer Project, Duke University**                                               **Jan 2016-May 2016**
- Designed and built an Arduino-based pedometer which detects step by measuring axes acceleration, using I2C for serial communication, EEPROM for data storage and LCD for user message display
- Implemented features such as activity level detection and visualization, lifetime steps recording and power saving mode

**VGA-based Gomoku Board Game Project, Duke University**                                          **Mar 2016-May 2016**
- Implemented the Gomoku game on the DE2 board with a pipelined processor self-designed using Verilog and MIPS
- Deployed a winning condition checker using combinational logic and MUX selector

**The 3D-Printed Modular Glass Frame Project, ViFlex, LLC, Durham, NC**                           **Nov 2015- May 2016**
- Designed and fabricated prototypes of modular spectacle product with SolidWorks and 3D printing techniques
- Optimized manufacturing process to reduce production cost to $0.85 per frame

**The Rechargeable Battery-based Surgical Headlamp Project, WISER**                               **Feb 2015- May 2015**
- Collaborated with 2 team members to analyze and redesigned a rechargeable battery-based lighting unit using CAD tools
- Pitched product to client from Muhuru Bay, Kenya and designed instruction manual for later implementation