

# ZACHARY RAUEN

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**PROFILE** Computer Engineer, with an innovative mind and drive, looking to change the world.

## EDUCATION AND TRAINING

**Clarkson University 2018** **Master of Science:** Electrical and Computer Engineering **3.9 GPA**  
**Clarkson University 2016** **Bachelor of Science:** Computer Engineering **3.67 GPA**  
**Awards:** Presidential Scholar, Deans List, John B. Russell Award, Best Research  
**Minors in:** Software Engineering, Computer Science, and Mathematics.

## PROFESSIONAL EXPERIENCE

**Fall 2016 - Present:** **Crowdsensing Researcher | Clarkson University – Potsdam, NY**  
Currently working in a team to create an Android app that tracks sensor data about users focusing currently on social network activity. We provide users with relevant feedback such as data usage and how active they are.

**Summer 2015:** **Hardware & Software Developer | IBM – Poughkeepsie, NY**  
Used leadership and collaboration skills to develop a new tool to test the hardware recovery of Z and P series mainframes across multiple sites (international) of IBM. Designed and implemented the firmware for the tool hardware as well as a remote GUI interface while collaborating on hardware design.

**Summer 2014:** **Biometrics Researcher | Clarkson University – Potsdam, NY**  
Designed and developed an algorithm for cyber security; user verification via keystroke biometrics. This included a basic computer learning aspect. User verification rates were increased from 80.2% to 96.8% and the false acceptance rates were decreased from 12% to 2.73%. Award won at the annual SURE Conference.

## PUBLICATIONS & AWARDS

### SCPE – 2017

Zhiliu Yang, **Zachary I. Rauen**, Chen Liu, “Automatic Tuning on Many-Core Platform for Energy Efficiency via Support Vector Machine Enhanced Differential Evolution”, Scalable Computing: Practice and Experience.

### OSN Journal – 2016

**Zachary I. Rauen**, Burak Kantarci, Hussein T. Mouftah, “Resiliency versus energy sustainability in optical inter-datacenter networks”, Optical Switching and Networking, ISSN 1573-4277

### IEEE Paper – 2015

**Zachary Rauen**, Burak Kantarci, Mahesh Banavar, Nick Rolfe, Will Freitag, “A Tool for Simulation and Visualization of Distributed Estimation in Wireless Sensor Networks.” IEEE Frontiers in Education Conference.

### NSF Award/Paper – Ending 2016

Stephanie Schuckers, Daqing Hou, **Zachary Rauen**, Andrew Hou, Adam Scott, “Long-term Active User Authentication Using Multi-modal Profiles.” CNS Division of Computer and Network Systems.

## PROJECTS

### **Autonomous Robotics** – Computer Engineering Senior Design

Led a small team that designed and developed a small autonomous car that followed a track made from a black line. The car detected sign posts, turning as directed at intersections. When placed away from the track, the car successfully located the track. The car was controlled by a K64F microcontroller programmed to use both mechanical front steering as well as tank-drive style differential.

### **Hardware & Software Interaction** – Computer Engineering Lab

Designed and implemented a working ‘Hangman’ GUI that connects to a serial adapter interfaced to an external PS/2 keyboard. This project also included grabbing and converting the data for the serial adapter via hardware.

## SKILLS & INDEPENDENT LEARNING

**Software** – Photoshop, Inventor, Multisim, Xilinx ISE & Vivado, Altera Quartus II, Git  
**Digital Design** – Circuit Diagrams, FPGAs, Microcontrollers, Timing Analysis, Minimal DSP  
**Web Development** – HTML5, CSS3, Sass/Scss, Less, PHP, SQL, Javascript, Node, React, Electron, WebGL  
**Computer Languages** – C, C++, C#, Java, VHDL, Python, R, Assembly, OpenGL API  
**Miscellaneous Languages** – Bash, LaTeX, Spice, XML, AHK, GML, MATLAB, Markdown

## LANGUAGES

Bilingual Spanish/English

## AFFILIATIONS

**IEEE:** Graduate Member, **Table Tennis Club:** President, **Circle K International**