

Matthew Stafford

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College Senior pursuing a B.S. in Computer Science. Active in researching the medical applications of smart phones and other smart wearables. Demonstrated ability to plan, research, and implement software solutions. Familiar with publishing and crafting research papers.

Education

- College: University at Buffalo (SUNY)
- Major: Computer Science
- Enrolled: 2014-Present
- Degree: Computer Science B.S.
- GPA: 3.483
- Relevant Classes: Java Intro I&II, Data Structures, Theory of Computation, Introduction to Machine Learning, Algorithms, Intro to JavaScript, Software Engineering(Agile programming intro), Intro to Cyber Security, Real Time Embedded Systems

Research

- **The Embedded Sensing and Computing (ESC) Lab** **University at Buffalo**
Student Researcher *August 2014–Present*
 - Developed a 'Stroke Rehabilitation System' that uses a smart phone, smart watch, and 3-D printed cup. Provides stroke sufferers with a rehabilitation tool that tracks and provides feedback to users during their exercises.
 - Responsibilities included developing adaptable workout application and administering data collection in a clinical trial.
 - Developed 'Flappy Breath', an Android application that uses a patient's breathing as a game interface. Designed as a rehabilitation system for sufferers of Chronic Obstructive Pulmonary Disease (COPD).
- **Summer REU: Security of Mobile Devices and Wireless Networks** **New York Institute of Technology**
Research Assistant *Summer 2017*
 - Developed and Authored 'TETRIS: Smartphone-to-Smartphone Screen-Based Visible Light Communication'
 - Responsibilities included developing Android Application, crafting research paper, and data collection.
 - Co-Authored 'Indoor Localization through Visible Light Characterization using Front-Facing Smartphone Camera'
- **The Fisher-Price Early Childhood Research** **University at Buffalo**
Student Assistant *September 2016–June 2017*
 - Developing an interactive book for children that uses an Android tablet to display pages, play narration, and colorfully animate the story.
 - Tracks child's gaze and touches on tablet's screen.
 - Maps data into a graphical interface for clearer understanding of data.
- **Team 340 Robotics Team** **Churchville-Chili High School**
Software Engineer *2010-2013*
 - Developed Java-based robotic control software
 - Developed 'Override Board', converted an Arduino and its user controls into a USB controller
 - Worked on LabVIEW code base to develop a heads-up display for the robot.

Projects

- Smart Coffee Maker
 - Augmented inexpensive coffee maker with temperature, water level, an automatic shutoff sensors
 - Flask-Based web application to display coffee's brewing analytics
 - Twitter enabled activation
- Smartphone Enabled Scheduler
 - Developed smartphone based scheduling application
 - Uses Google's Calendar API, Node.js, Mongo DB, and Java Spring to cross reference user's calendar data.

Awards

- Major League Hacking Season 18 University at Buffalo '1st Place' and 'Best Hack that Improves or Works to Preserve the Environment'
- First place ribbon at CSE 50th Anniversary Celebration presenting 'Stroke Rehab' poster - September 30th, 2016 and October 3, 2017

Published Papers

- 'TETRIS: Smartphone-to-Smartphone Screen-Based Visible Light Communication'
- 'Flappy Breath'
- 'Indoor localization through visible light characterization using Front-Facing smartphone camera'

Technical and Personal skills

- Programming Languages:
 - Proficient: Java, XML, Android Studio Development, Real Time data analysis
 - Familiar: C++, Python, C, Git, GitHub, JavaScript, CAD Design, 3D Printing, Node.js, REST with Spring, MongoDB, Slack, Agile Development Practices, LABView
- General Skills: History of professional presentations (Poster & Sideshow), Experienced in team based research projects, Actively communicates project to both technical and non-technical clients