

# Emerson Joseph Summe Walsh

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## Johns Hopkins University

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### Bachelor of Science in Mechanical Engineering

Class of 2017

- GPA: 3.72 / 4.00
- Minor in Entrepreneurship and Management
- Two-time recipient of the JHU Student Initiatives Funding (2015 & 2016)
- Vice President of JHU American Society of Mechanical Engineers
- Computer-Aided Design Teaching Assistant (2016)

## Professional & Leadership Experience

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### Oceaneering International Advanced Tech – Mechanical Engineering Intern (Hanover, MD)

Summer 2016

- Worked with a team of twelve to develop a seven million dollar project funded by DARPA
- Performed data analysis, structural design and analysis, and design calculations to build and test a large, unmanned underwater vessel to meet project requirements and optimize performance
- Personally reduced the total cost of the buoy system by 20% through design optimization
- The system will be configured with modular payloads to clandestinely deploy a mix of unmanned vehicles into operational environments for intelligence, surveillance, and reconnaissance

### Smart Vibe Tennis (Personal Design Project) – Inventor and Team Leader

2015 - present

- Awarded \$1,000 from the Student Initiatives Fund (sponsored by Hopkins Alumni and Whiting School of Engineering) for the development of a “smart” vibration dampener for tennis racquets
- Successfully developed first-generation mobile prototype using 9-axis inertial measurement unit wirelessly streaming data
- The device can analyze a player’s game and output the following statistics: number of hits; individual, average, and maximum swing speeds; duration of play; elapsed time between shots; estimation of ball speed on serve
- The device can recognize the following: forehand vs. backhand; serve vs. groundstroke; volley vs. groundstroke; topspin shot vs. slice shot; cross-court shot vs. down-the-line shot
- Currently refining the product with plans to begin initial manufacturing and sales by 2017

### University of Berkeley SWARM Lab and Invention Lab – Research Engineer (Berkeley, CA)

Summer 2015

- Focused research efforts on a ring based wearable sensor mote capable of providing inertial data to a host
- Developed a platform capable of sensing and interpreting a user’s hand and finger movements to emulate and enhance the function of classic input methods to smartphones, tablets, and heads-up display
- Successfully designed packaging and printed customized housing for device
- Performed data analysis to recognize unique inertial gestures to generate specific keyboard tasks

### Genscape Inc. – Research and Development Scientist (Louisville, KY)

Summer 2014

- Genscape is an energy information company focused on providing real-time data and intelligence for global commodity and energy markets; Genscape measures market fundamentals using patented monitors deployed worldwide
- Member of R&D team responsible for developing new image analysis methods to gather critical energy information
- Independently designed and implemented an automated program that uniquely identifies and counts vehicle traffic at biofuel pump stations and outputs valuable data that customers can use to measure nation-wide biofuel production status
- This project resulted in reducing the number of man-hours required to monitor biofuel production by over 80%

### Global Engineering Innovation – Team Leader

2014 - present

- GEI is a JHU-sponsored team that gives students an opportunity to tackle engineering challenges in the developing world
- Lead a team of 9 students to develop a fish dryer and rice harvesting system designed to be safe, efficient, affordable, and locally sustainable to meaningfully improve the local fish smoking culture in rural East Java, Indonesia

### Special Olympics – Volunteer Tennis Coach (Baltimore, MD)

2013 - present

## Johns Hopkins Men’s Varsity Tennis Team

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- Selected as a Team Captain for 2016-2017 season
- Four-time NCAA All-American
- Team Representative for JHU Student-Athlete Advisory Committee
- 2013, 2014, 2015, 2016 ITA Southeast Region Men’s Doubles Champion
- Committed to a schedule of 20+ hours per week for training and competition

2013 – present

## Skills & Interests

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- **Software:** MATLAB, Python, Java, SimpleCV Platform (computer vision), PTC CREO, SolidWorks, AutoCAD, OpenSCAD, Swift, V-Rep Simulation, Logger Pro, Microsoft Excel and PowerPoint
- **Hardware/Machining:** Laser Cutting; 3D Printing; Casting; Lathe; Mill; CNC Manufacturing; Wire EDM; Welding; Raspberry-Pi operation and development; Electronic Instrumentation including: Oscilloscope, Function Generator, Multimeter, and Breadboard
- **Interests:** Travel, Scuba Diving, Skiing, Mountain Biking, Music, Tennis Racquet Stringing