Aaron C. **Brzowski**

Software Engineer · Student

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Education

Western Kentucky University — *Bowling Green, KY*

B.S. in Robotics Engineering — *Aug. 2014 - May 2018*

- Received the Tier One Scholarship which provides full funding for tuition, housing, meals, and books

Skills

Programming Wolfram Language, C++, JAVA, Bash, LaTeX, PHP

Tools Mathematica, Robot Operating System (ROS), LabView, Git

Languages English, Basic French

Experience

NASA Ames Research Center — *Mountain View, CA*

Research Associate — *Jun. 2016 - Aug. 2016*

- Contributed to SAFE50 project which focused on ensuring safety of UAV flight under 50 feet altitude in urban areas.
- Implemented camera and range sensor interfaces and managed data acquisition for inflight sensor data collection using Robot Operating System (ROS)
- Developed protocol for indoor flight using AprilTags as camera detectable waypoints, as well as 2D obstacle avoidance using a ring of 8 outward facing IR range sensors.
- Managed planning algorithm for autonomous indoor flight using waypoints.

Kentucky Department of the Blind — *WKU, Bowling Green, KY*

Mathematics Tutor — *Mar. 2016 - May 2016*

- Assisted a visually impaired student with coursework pertaining to mathematics and mechanical engineering.
- Provided assistance in reading coursework and homework assignments, and also administered exams.

WKU IT TopperTech — *WKU, Bowling Green, KY*

Student Consultant — *Jan. 2015 - Jan. 2016*

- Diagnosed and repaired software, hardware, and network issues on Apple computers and all machines running the Microsoft Windows operating system.
- Remedied heavy malware infections, repaired corrupt operating systems and machine malfunction, and disassembled machines to diagnose hardware failures and hardware replacement.

WKU Physics Deaprtment — *WKU, Bowling Green, KY*

Teaching Assistant, University Physics 1 — *Jan. 2014 - May 2014*

- Assisted students in performing physics experiments in mechanics and thermodynamics which stress the fundamental definitions and laws developed in the lecture course.
- Oversaw the development of students gaining experience in computerized data acquisition and data analysis using modern techniques and equipment.

Carol Martin Gatton Academy/Western Kentucky University — *Seoul, S.Korea*

Student Researcher — *Aug. 2012 - May 2014*

- Attended number one ranked high school in the U.S. as ranked by Newsweek and The Daily Beast, 2012-13, and by Daily Beast in 2014
- Studied the relativistic effects of the Alcubierre Drive and its possible implications on space travel.

Purus/Open World Cause — *United States*

Director and Co-Founder — *Aug. 2013 - Present (currently consulting position only)*

- Led organizing efforts for volunteers and international connections.
- Provided access to education for hundreds of school children, and access to clean water to nearly 1000 people in rural Nepal.

Honors & Awards

PennApps XIV — *University of Pennsylvania*

Winner, Best IoT Hack — *Sept 9-11 2016*

- Developed an IoT fully automated egg cooker called *Eggsy*. Eggsy makes cooking eggs easy. Simply place your egg in the machine, customize the settings on your phone, and get a fully-cooked egg in minutes.
- I integrated all hardware within the Eggsy device, i.e., servo manipulation, arduino programming, product design and layout.

Hack K State Hackathon — *Kansas State University*

Winner, Third Prize — *April 2016*

- Developed a web app in Wolfram Language to document and analyze unidentified plants using classifier functions and machine learning.
- Utilized images of plants as input from smartphone camera.
- Wrote custom API function within Wolfram Language to return info about poisonous factor, species, and brief description of plant.

CatHacks II — *University of Kentucky*

Winner, Third Prize and Best Use of Wolfram Technology — *March 2016*

- Utilized a Leap Motion controller to sense motion in 3D space and transformed user input in realtime into dynamically visualized plots in Mathematica.
- Options included drawing 3D curves and analysis, drawing a signature and storing it as a PDF file, and classifying multiple user's signatures to determine difference between multiple signatures using machine learning algorithms.

CatHacks I — *University of Kentucky*

Winner, Second Prize — *March 2015*

- Developed and marketed a media player called "Cadence" that runs on the Android OS.
- Designed to learn musical preferences through a weighted algorithm.

Presentation

Quarterly Briefing Presentation — *Mountain View, CA*

Presentor to NASA Ames Research Center Director — *Aug. 2016*

- Presented research regarding indoor flying autonomous quadcopters and their safety in urban areas to NASA Ames Research Center director, Eugene Tu.

International Society for Technology in Education Conference — *Atlanta, GA*

Presenter for ISTE 2014, International Impact Speech — *Jul. 2014*

- Presented work that Purus had done in the prior year about water filtration system distribution and international impact of humanitarian efforts.

Program Committees

2016 **Founder and Lead Organizer**, 1st Hack The Hill Hackathon — *Western Kentucky University*

2015 **Volunteer**, CatHacks 2 Hackathon — *University of Kentucky*