

TYLER BUGBEE

4390 Dunmore RD NE, Marietta, GA 30068 • 404.429.1877

tbugbee1@gmail.com • www.tylerbugbee.com
smallsat.uga.edu/research

PROFESSIONAL SUMMARY

Motivated Software Engineer with experience developing enterprise applications and conducting award-winning space exploration research. Passionate about computer vision, autonomy, and exploring the nature of things using data.

EXPERIENCE

Broadspire – Atlanta, GA

January 2018 – Present

Software Engineer

- I am the technical lead for the organization-wide RPA project, serving as lead developer and technical advisor to a dedicated team reporting to the Director of IT
- I utilize the Agile/SCRUM methodology to engage with business stakeholders across multiple business lines
- I have developed and deployed RPA processes to several corporate locations that directly impact revenue-generating business processes
- Processes are developed using UiPath and Microsoft VB .NET

University of Georgia Small Satellite Research Laboratory – Athens, GA

October 2017 – January 2018

Leadership – Electronics Team Lead

- I managed the Electronics team and ensured deliverables were completed to a high standard and on-schedule with periodic reviews
- I was a primary driver of decisions regarding the development of the electronic subsystems onboard the satellite, often acquiring expertise in unfamiliar topics
- I collaborated with other teams, such as mechanical, mission operations, and lab operations to ensure mission success criteria were met

University of Georgia Small Satellite Research Laboratory – Athens, GA

February 2017 – October 2017

Electronics Team - Research and Payload Integration Engineer

- I operated as an undergraduate researcher in the Small Satellite Research Lab on two missions funded by NASA and the Air Force Research Laboratory in collaboration with the University of Georgia
- I integrated software and hardware components with existing systems:
 - Interfacing complex software infrastructures with existing libraries
 - Evaluating payload requirements and determining methods of integration
- I developed the driver-level communication methods for each subsystem of the MOCI satellite mission using an array of hardware description languages and system-level languages such as C and C++
 - Many different protocols were required such as SPI, I2C, UART/RS-422 and CAN
- Software libraries were written in C++ and include NVIDIA CUDA workloads focused on image processing and mesh layer generation
- Satellite payloads include imaging sensors, GPUs, and FPGAs

Broadspire – Atlanta, GA

June 2015 – December 2017

Junior Software Engineer

- I operated as a key team member of the IT business unit dedicated to establishing a Robotic Process Automation COE
- I utilized the Agile framework to manage and execute the PoC and Pilot phases of the project
- My work crossed over the disciplines of Software Engineering, Project Management, and Research and Development
- Conducted machine learning research
 - I implemented the Vowpal Wabbit algorithm using python to make predictions over a large dataset
 - I fine-tuned key parameters of the core algorithm to arrive at an accurate model
- Developed, executed, and managed multiple marketing projects involving extensive logistics and corporate communication

EDUCATION

University of Georgia – Athens, GA
Bachelor of Science, Computer Science

Graduated December 2017
GPA: 3.40

Georgia State University – Atlanta, GA
Honors College
Bachelor of Science, Computer Science

June 2014 – May 2015
GPA: 3.74

| SKILLS | TOOLS | PROJECTS |
|--|--|---|
| <p>C/C++ – Proficient with emphasis in several advanced topics such as multithreading and synchronization techniques</p> <ul style="list-style-type: none">• Additional exposure to networking functions using C++ such as network IPC <p>Java – Extensive problem-solving experience, work with the JDBC driver</p> <p>Python – Intermediate to advanced program design</p> <ul style="list-style-type: none">• Advanced topics such as lambda functions applied to list comprehension <p>Microsoft Visual Basic .NET – Enterprise application experience</p> <ul style="list-style-type: none">• Embedded .NET code to optimize RPA tools and processes <p>SQL – Large dataset application with levels of aggregation</p> <ul style="list-style-type: none">• Additional personal experience with more advanced SQL functions such as joined tables <p>JavaScript – Exposure to the React and Angular frameworks</p> | <p>Linux – Proficient in Linux systems and various kernels</p> <ul style="list-style-type: none">• Knowledge of Linux (bash) shell commands• Personal study of the LPI Introductory Program <p>Git – Experience with using repositories and Git shell functions</p> <ul style="list-style-type: none">• GitHub: https://github.com/tbarc <p>RPA – Extensive knowledge of developing and deploying RPA solutions</p> <ul style="list-style-type: none">• Experience with development for enterprise level RPA application• Experience with infrastructure supporting real-time analytics and data storage <p>APIs – Knowledge of end to end implementation and authentication</p> <ul style="list-style-type: none">• Experience with implementing OAuth and OAuth 2 authentication methods• Experience with JSON and XML | <p>POSIX Thread Implementation –</p> <ul style="list-style-type: none">• C project using pthreads to create a multithreaded web server using safety operations such as semaphores and mutexes <p>UVC Camera Control –</p> <ul style="list-style-type: none">• C project using the V4L2 library to command a CMOS sensor over USB protocol• Includes compression algorithm to convert raw images into a digestible format <p>Binary Search Tree implementation and analysis –</p> <ul style="list-style-type: none">• C++ object-oriented project focused on implementing a true binary tree with extensive member functions <p>Search Algorithm implementation and analysis –</p> <ul style="list-style-type: none">• C++ project focused on efficiency comparisons between search algorithms on large datasets• Conducted efficiency analysis including runtime/space complexity |

EXTRACURRICULAR ACTIVITIES

Marching/ Concert Band

2010 – 2014

Percussion Section Leader

- BOA Super Regional Championships – 2010, 2011, 2012, 2013 – Atlanta, GA - Finalists
- BOA Grand National Championships – Indianapolis, IN – 2012 – Finalist

Percussion Ensemble Member

Quartet Leader/Participant

Symphony Orchestra Percussionist (One of 5 selected)

- Music for All Midwest Clinic – Chicago, IL – 2012

Accomplished Concert Pianist

- Extensive classical training since ~2000
- Continued private study

ACCOMPLISHMENTS

- Conducted research for the University of Georgia Small Satellite Laboratory
 - Awarded large research grants from NASA and USAF to develop and launch satellites into low earth orbit
 - Selected to move forward in a competitive funding program over leading institutions such as MIT, Georgia Tech, and Stanford
- AP Scholar with Distinction
- University of Georgia Dean's List 2017
- Georgia State University President's List 2014