TYLER BUGBEE

Atlanta, GA • 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 March 2020 – Present
Lead Software Engineer, RPA Program Manager

- As the Program Manager for Broadspire's global RPA initiative, I drive implementation, architecture, governance, and solution engineering across multiple teams and geographies. I also lead the RPA engineering and process analysis team for Broadspire US.
- I oversee the RPA Center of Excellence to ensure alignment at all levels of the organization, advise other business areas in their implementation of RPA technologies, and manage the integration and relationship of our RPA vendor.

Broadspire – Atlanta, GA January 2018 – March 2020
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 improve revenue-generating business processes
- Processes are developed using UiPath, Microsoft VB .NET, C#, and other languages as required such as Python, SQL, and JavaScript.

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 Graduated December 2017
Bachelor of Science, Computer Science GPA: 3.40

Georgia State University – Atlanta, GA June 2014 – May 2015 Honors College
Bachelor of Science, Computer Science GPA: 3.74

SKILLS

C/C++ – Proficient with emphasis in several advanced topics such as multithreading and synchronization techniques

- Additional exposure to networking functions using C++ such as network IPC

Java – Extensive problem-solving experience, work with the JDBC driver

Python – Intermediate to advanced program design

- Advanced topics such as lambda functions applied to list comprehension

Microsoft Visual Basic .NET – Enterprise application experience

- Embedded .NET code to optimize RPA tools and processes

SQL – Large dataset application with levels of aggregation

- Additional personal experience with more advanced SQL functions such as joined tables

JavaScript – Exposure to the React and Angular frameworks

TOOLS

Linux – Proficient in Linux systems and various kernels

- Knowledge of Linux (bash) shell commands
- Personal study of the LPI Introductory Program

Git – Experience with using repositories and Git shell functions

- GitHub: https://github.com/tbarc

RPA – Extensive knowledge of developing and deploying RPA solutions

- Experience with development for enterprise level RPA application
- Experience with infrastructure supporting real-time analytics and data storage

APIs – Knowledge of end to end implementation and authentication

- Experience with implementing OAuth and OAuth 2 authentication methods
- Experience with JSON and XML

PROJECTS

POSIX Thread Implementation –

- C project using pthreads to create a multithreaded web server using safety operations such as semaphores and mutexes

UVC Camera Control –

- 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

Binary Search Tree implementation and analysis –

- C++ object-oriented project focused on implementing a true binary tree with extensive member functions

Search Algorithm implementation and analysis –

- 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