Hunter M Bashaw

github.com/bashawhm
blivet.sh | hunter@blivet.sh

EDUCATION

CLARKSON UNIVERSITY
POTSDAM, NY
BACHELOR OF SCIENCE
COMPUTER SCIENCE
MINOR IN MATHEMATICS
GPA: 3.6/4.0

SKILLS

PROGRAMMING
Proficient:
C • C++ • Go
Used:
Rust • Python • C# • Swift • Java
Objective-C • Haskell • HTML
x86 and Sparc Assembly

TECHNICAL SKILLS:
Git • ROS • SpriteKit • SDL • WPF
UWP • QEMU • Wireshark • NMap
Bash • LaTex • Linux • Mac OS/iOS
Microsoft Windows

PUBLICATIONS

IROS 2020
Design and Experiments with LoCO AUV:
A Low Cost Open-Source Autonomous
Underwater Vehicle

AIES 2020
When Trusted Black Boxes Don't Agree:
Incentivizing Iterative Improvement and
Accountability in Critical Software
Systems

COURSEWORK

UNDERGRADUATE
Artificial Intelligence
Operating Systems
Computer Networks and Security
Formal Methods and Program Verification
Compiler Construction
Computer Algorithms
Algorithms and Data Structures
Software Design and Development
Computer Networks
Automata Theory and Formal Languages
Programming Languages
Computer Organizations
Advanced Programming Concepts in Java
Applied Linear Algebra
Probability and Statistics
Introduction to Computer Science 2
Introduction to Computer Science 1

INDUSTRY EXPERIENCE

JOHNS-HOPKINS APPLIED PHYSICS LAB | SOFTWARE ENGINEER
June 2020 - Present | Laurel, MD
Designed flight software applications for the command and data handling subsystem
of the IMAP spacecraft
- Designed flight software applications to manage instrument commands, file system interaction, CPU scheduling, and task health monitoring
- Lead a project to emulate our spacecraft hardware in QEMU (Sparc32)
- Planned and assisted hosting the 2021 Flight Software Workshop
- Ported our build system and flight software to RTEMS 5.1
- Contributed to a trade study on flash file systems

BLUEROOF LEARNING | BACKEND SOFTWARE ENGINEER
February 2020 - June 2020 | Remote
Worked as a backend developer for BlueRoof, an online music education platform
- Implemented the Skills Assessment Survey scoring algorithm
- Worked on data layout changes inside the PostgreSQL database
- Updated the server configuration import system

C SPEED, LLC | SOFTWARE ENGINEERING INTERN
May 2018 – August 2018 | Liverpool, NY

- Wrote hardware health testing software for ARM and FPGA based systems
- Worked with embedded protocols, such as SPI and I2C
- Worked with embedded operating systems such as FreeRTOS
- Wrote GUIs for various software projects in WPF, AvaloniaUI, and NoesisGUI

CLARKSON OPEN SOURCE INSTITUTE | LAB DIRECTOR
April 2017 – October 2018 | Potsdam, NY
- Managed lab meetings, budget, and social environment
- Present weekly "lighting talks" (5-minute computer science talks)
- Implemented small operating system kernel in Rust
- Implemented VGA driver in C and Rust
- Studied Google's Fuchsia operating system and tested various components
- Wrote Markov-based IRC and Discord bot to generate conspiracy theories
- Wrote city builder game in C and Rust using SDL2
- Lead workshops on robotics, Go, and electroencephalography
- Maintained lab machines and networking infrastructure in remote lab space
- Maintained services: backup server, SSH gateway, web hook server, NAS
- Implemented a robotics system to map buildings
- Recorded meeting minutes for every meeting

CLARKSON UNIVERSITY | TUTOR
January 2017 – Present | Potsdam, NY
- Tutoring students in C++ for Intro to CS I and II classes
- Tutoring students in Java for Clarkson's Advanced Programming Concepts in Java course

RESEARCH EXPERIENCE

APPLIED COMPUTER SCIENCE LAB | Research Assistant
August 2019 – February 2021 | Potsdam, NY
Worked under Dr. Jeanna Matthews with a team of researchers to comparatively test various Probabilistic Genotyping Software systems
- Assisted with writing our AIES 2020 paper: When Trusted Black Boxes Don't Agree: Incentivizing Iterative Improvement and Accountability in Critical Software Systems
- Modified our distributed testing software to manage peak allele height data
- Defined standard formats for all of our testing setups
- Wrote format conversion scripts to translate between our standard and the format used by each individual application

INTERACTIVE ROBOTICS AND VISION LAB | Research Assistant
June 2019 – August 2019 | Minneapolis, MN
Worked under Dr. Junaed Sattar with a team of researchers to design and implement two autonomous underwater vehicles
Data Diver
- Created a ROS based software stack to manage sensor communication
- Implemented a visual saliency algorithm to determine camera movements
- 3D Printed and assembled parts
EdgeBot
- Implemented a ROS teleoperation node to guide the robot
- Configured and maintained the main guidance computer

COSINE LAB | Research Assistant
September 2017 – May 2018 | Potsdam, NY
Worked under Dr. Mahesh Banavar to design and implement an electroencephalogram based control system for robotics applications
- Created a threshold-based system to signal movement commands
- Created a averaging filter to clean noise in the data
- Learned principles of electroencephalography

COMPUTER ARCHITECTURE AND MICROPROCESSOR ENGINEERING LAB | Research Assistant
June 2017 – August 2017 | Potsdam, NY
Worked under Dr. Chen Liu to create RMS, a system to provide efficient communication between different processes on an embedded device or mobile robot
- Created a IPC based publisher/subscriber system for data transfer
- Learned IPC and networking principles

CODING COMPETITIONS

Hack Upstate	Created an iOS game with Sprite Kit
ANYCON	Won fourth place in network security capture the flag
Hack Potsdam	Created an Alexa app to control and maneuver a turtlebot
S.H. Roguelike	Created a Roguelike video game in seven hours
Scratch Off	Created a game in Scratch

AWARDS

Miller/Davis Service Award for Computer Science	2019
Deans List	2019 and 2017
RAPS Honorable Mention in Signal Processing	2018
Best Use of AWS Award at Hack Potsdam	2017
FIRST Robotics Scholarship	2016
Clarkson Merit Scholarship	2016
R.I.T. Computing Medal Scholarship	2016