Jayson Boubin
Curriculum Vitae

PERSONAL DETAILS

Address	778 Dreese labs, 2015 Neil Avenue, Columbus Ohio, 43210
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Github	github.com/boubinjg

EDUCATION

PhD in Computer Science   2017-Preset
The Ohio State University
  Studying the fully autonomous aerial systems under Dr. Chris Stewart

BSc. in Computer Science   2013-2017
Miami University

WORK EXPERIENCE

PhD Student and Research Fellow   2017-Present
The Ohio State University, ReRout Lab
  I am a PhD student in the ReRoutLab at The Ohio State University working on state of the
  art computer systems and robotics research. I create fully autonomous aerial systems (FAAS);
  self aware unmanned aerial systems that solve dynamic, real world problems in areas like
  autonomous photography and agriculture. These FAAS leverage consumer grade hardware
  and advanced computer vision and deep learning algorithms to accomplish missions with
  no human supervision. As part of my research, I have developed an open source software
  package for FAAS, SoftwarePilot, that I maintain on Github.

Research Intern   2019
Air Force Research Lab, AutoWav Project
  At AFRL, I created and tuned deep learning models to eliminate interference in radar signals.
  I worked with new hardware accelerators such as the Intel Loihi to create real time, low
  power, deep solutions to compete with existing interference removal research. I sped up
  our existing neural network by 8x, and decreased its size by 40x to execute on low-power
  accelerators.

Research Fellow   2014-2017
Air Force Institute of Technology
  As a research fellow at AFIT, I performed research under Maj. Christina Rusnock, PhD and
  Dr. Michael Miller in areas such as unmanned aerial systems, cybersecurity, applied neuro-
  science, and autonomy. I conducted my own research into these topics while preparing lecture
  materials for graduate level courses, writing academic papers, posters, and presentations,
  and collaborating with excellent researchers on popular research problems.

Undergraduate Research Assistant　　　　　　　　　　　　　　　`2013-2014`

PC2 Lab

> I performed research under Dr. Dhananjai Rao focusing on parallel agent based simulation optimization on compute clusters.

AWARDS AND HONORS

NSF Graduate Research Fellowship (2019)

Ohio State College of Engineering Graduate Fellowship (2017)

Best Student Paper, Human Performance Modeling Track,
HFES (2017) (C1)

Best Poster Honorable Mention,
Ohio State CSE Graduate Research Poster Expo (2018) (T6)

KAOC Integrated Product Team Award
AutoWav Project (2019) (T7, C5)

NSF Travel Grant
IEEE ICAC (2017,2019)

NSF Travel Grant
IEEE/ACM SEC (2019)

CONFERENCE PAPERS

(C5) **Jayson Boubin**, Aaron Jones, Trevor Bihl
NeuroWav: Toward Real-Time Waveform Design for VANETs using Neural Networks
IEEE VNC 2019

(C4) **Jayson Boubin**, Naveen T.R Babu, Christopher Stewart, John Chumley, Shiqi Zhang
Managing Edge Resources for Fully Autonomous Aerial Systems
IEEE/ACM SEC 2019

(C3) **Jayson Boubin**, John Chumley, Christopher Stewart, Sami Khanal
Autonomic Computing Challenges in Fully Autonomous Precision Agriculture
IEEE ICAC 2019

(C2) **Jayson Boubin**, Christina Rusnock, Jason Bindewald
Quantifying Compliance and Reliance Trust Behaviors to Influence Trust in Human-Automation Teams
HFES 2017

(C1) Christina Rusnock, **Jayson Boubin**, Joseph Giametta, Tyler Goodman, Anthony Hillesheim, Sungbin Kim, David Meyer, Michael Watson
The Role of Simulation in Designing Human-Automation Systems
HCI 2016

PUBLISHED ABSTRACTS

(A1) **Jayson Boubin**, Shiqi Zhang, Venkata Mandadapu, Christopher Stewart
Poster Abstract: Characterizing Computational Workloads in UAV Applications
IoTDI 2018

TALKS AND POSTERS

(T8) **Jayson Boubin**, Zichen Zhang, Shiqi Zhang, Christopher Stewart
SoftwarePilot: An Open Source Middleware for Fully Autonomous Aerial Systems
Poster: ACM Student Research Competition, MICRO 2019

(T7) Aaron M. Jones, Trevor Bihl, Ashley DeMange, Peter John-Baptiste, **Jayson Boubin**, Patrick Farr
AutoWav Project: AI/ML for Cognitive EW
Poster: Association of Old Crows Kittyhawk Week Conference

(T6) **Jayson Boubin**, Shiqi Zhang, Venkata Mandadapu, Christopher Stewart
Characterizing Computation in UAV Applications
Poster: IoTDI 2018, OSU CSE Poster Expo 2018

(T5) **Jayson Boubin**, Christina Rusnock
Quantifying and Evaluating Trust in Automated Systems
Talk: ISERC 2016

(T4) **Jayson Boubin**, Christina Rusnock, Michael Miller
Eliciting and Algorithm to Replicate Human Trust in Automation in the Domain of Reliance
Poster: DESS 2015, Soche Poster expo 2015

(T3) **Jayson Boubin**, Christina Rusnock, Michael Miller
Simulating Compliance and Reliance
Talk: Cincinnati-Dayton INFORMS 2015

(T2) **Jayson Boubin**, Christina Rusnock
Modeling Cognitive Workload and Fatigue for Defensive Cybersecurity Operators
Poster: AFIT Summer Intern Poster Session 2014

(T1) **Jayson Boubin**, Paul Bondurant, D.J. Rao
Dynamic Process Migration in Agent Based Simulation
Poster: Miami University Undergraduate Research Forum 2014

TEACHING

Graduate Teaching Assistant   `2019-Present`
The Ohio State University

> As and GTA, I am the instructor of record for CSE 2431: Systems II: Introduction to Operating Systems. I teach students about fundamental operating systems concepts like processes, threads, synchronization, memory management, I/O, etc, with a focus on Linux. I am responsible for lecturing, managing course materials, holding office hours, and submitting and approving grades.

Mean Student Evaluation Score: **4.6/5**.

Undergraduate Teaching Assistant 2017

Miami University

    As an Undergraduate TA at Miami University, I graded assignments and held weekly help sessions for Dr. Jianhui Yue's Systems 2: Operating Systems course.

SOFTWARE

SoftwarePilot

    I am the lead developer of SoftwarePilot, a middleware that supports fully autonomous aerial systems. SoftwarePilot is used by myself and researchers in the ReRoutLab to develop state of the art autonomous systems using cutting edge AI libraries. SoftwarePilot is open source and available on Github: *github.com/boubinjg/SoftwarePilot*

SKILLS

Programming (Skilled)	Java, Python, C++
Programming (Comfortable)	C, C#, Matlab, Bash
Operating Systems	Linux
HPC Software	MPI, OpenMP, CUDA
AI Software	Tensorflow, OpenCV, DLIB
UAS Software	DJI SDK, ArduPilot, MAVLink, DroneKit
Version Control	Git, SVN
Editing	Vim, LaTeX

REFERENCES

Available upon request