

# Zachary D. Jones

UNIVERSITY OF GEORGIA · GRADUATE ASSISTANT

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## Education

### University of Georgia

Athens, GA

M.S. IN ARTIFICIAL INTELLIGENCE · 4.00 GPA

Aug 2017 - May 2019

### Marshall University

Huntington, West Virginia

B.S. IN APPLIED MATHEMATICS · B.S. IN COMPUTER SCIENCE · 4.00 GPA

Aug 2013 - May 2017

- Won MU Hackathon 2014
- Named Outstanding Junior in Applied Mathematics and in Computer Science
- Named Outstanding Senior in Applied Mathematics

## Experience

### UGA Institute of Artificial Intelligence

Athens, GA

GRADUATE RESEARCH ASSISTANT

Aug 2017 - May 2019

- Assisted in research project using machine learning to predict power output of a solar farm
- Developed materials for the Summer 2018 Data Mining course, including code samples and theoretical write-ups
- Maintained lab computers and configured remote login services

### Upfront Tickets

Athens, GA

SOFTWARE CONSULTANT

June 2018 - December 2018

- Designed and implemented a dynamic ticket-pricing algorithm
- Prepared market simulators, MVP prototypes, and technical documentation

### Strictly Business Computer Systems

Huntington, WV

PART-TIME SOFTWARE ENGINEER

Jun 2014 - Aug 2017

- Developed dependable, cross-platform software applications
- Designed, debugged, and maintained software to meet client requirements
- Worked in a team-based environment with tight deadlines and budgets

### Auburn REU with Smart UAVs

Auburn, AL

UNDERGRADUATE RESEARCHER

May 2016 - Jul 2016

- Independently researched existing autonomous navigation systems
- Worked to develop a "See and Avoid" system for autonomous UAVs
- Designed and implemented SAA computer vision system and cockpit simulator

### DOW Chemical Company Research Grant

Huntington, WV

UNDERGRADUATE RESEARCHER

May 2015 - May 2016

- Maintained and developed chemical spill simulation software with an intense mathematical core
- Wrote project summaries and funding proposals

## Skills

**Languages** Python, Java, Javascript, C#, C++, C, PHP, SQL, Bash scripting

**Technologies** Anaconda Stack, PyTorch, OpenCV, Git, Google Cloud Platform, Apache Spark, ReactJS, VueJS, Node.js, JavaFX, OpenGL

**Other** Machine Learning, Deep Learning, Reinforcement Learning, Artificial Intelligence, Written/Oral Communication

## Projects

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### Apollo: Machine Learning for Solar Radiation Prediction

UGA

[HTTPS://BITBUCKET.ORG/ZACHDJ/APOLLO](https://bitbucket.org/zachdj/apollo)

2017-Present

- Machine learning software to predict the solar radiation received at a solar farm in Athens, GA
- Capable of training, tuning, and testing a wide variety of models
- Generates human-readable and machine-readable predictions

### Hasu: Reinforcement Learning for StarCraft II

Personal

[HTTPS://GITHUB.COM/ZACHDJ/HASU](https://github.com/zachdj/hasu)

2018-Present

- Quality implementation of the A2C Reinforcement Learning algorithm using Python
- Trains artificial agents to play mini-games from the challenging SCII environment

### Elizabeth: Scalable Malware Detection

UGA

[HTTPS://GITHUB.COM/ZACHDJ/ELIZABETH](https://github.com/zachdj/elizabeth)

2018

- Machine Learning software for the Microsoft Malware Classification Challenge
- Developed in a team of three over two weeks as a project in UGA's Data Science Practicum
- Achieved best-in-class accuracy

### SPOTT: System for Painless Optical Tennis Tracking

Marshall University

[HTTPS://BITBUCKET.ORG/ZACHDJ/TENNIS-TRACKER/](https://bitbucket.org/zachdj/tennis-tracker/)

2017

- Computer vision system to automatically track shot locations during tennis matches
- Published work in COMPSAC 2018 journal

### UAV See and Avoid

Auburn REU

[HTTPS://BITBUCKET.ORG/ZACHDJ/SEE-AND-AVOID/](https://bitbucket.org/zachdj/see-and-avoid/)

2016

- Computer vision "See and Avoid" system for autonomous UAVs
- Simulates single-camera cockpit view + flight dynamics
- Designed to autonomously detect obstacles and attempt an avoidance maneuver

## Extracurricular Activity

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### Deep Learning @ UGA

Athens, GA

STUDENT COMMITTEE

Jan 2018 - Present

- Helped plan meetings and schedule talks
- Contacted potential speakers for bi-monthly meetings
- <https://eds-uga.github.io/delug/>

### Pi Mu Epsilon Mathematical Honor Society

Huntington, WV

MEMBER

Aug 2015 - May 2017

- Met weekly with other students to discuss challenging problems
- Attended Mathematical Conferences
- <http://pme-math.org/>

## Publications

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### CONFERENCES

2018 **Painless Tennis Tracking System**, Wook-Sung Yoo, [Zach Jones](#), Henok Atsbaha, David Wingfield

IEEE COMPSAC

2017 **An Unmanned Aircraft 'See and Avoid' Algorithm Development Platform Using OpenGL and**

**OpenCV**, [Zachary Jones](#), Andrew Morgan, Richard Chapman, Saad Biaz

CCSC

### PRESENTATIONS

2018 **Deep Learning**, Special Topics Talk for Machine Learning course. <https://goo.gl/HAvQAb>.

UGA CSCI 8950

2016 **UAV See & Avoid System**, <https://goo.gl/Hm2FF3>

Auburn