# 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*
- Developed software system which uses machine learning to predict power output of a solar farm
- Created Jupyter Notebooks 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 & AI CONSULTANT                                    *June 2018 - December 2018*
- Designed and implemented a dynamic ticket-pricing algorithm
- Prepared market simulators, software prototypes, and technical documentation

**Strictly Business Computer Systems**                                 *Huntington, WV*

PART-TIME SOFTWARE ENGINEER                                        *Jun 2014 - Jul 2017*
- Developed dependable, cross-platform software applications
- Designed, debugged, and maintained software to meet client requirements
- Worked in a team-based environment with tough deadlines and tight budgets

**Auburn REU with Smart UAVs**                                            *Auburn, AL*

UNDERGRADUATE RESEARCHER                                          *May 2016 - Jul 2016*
- Independently researched existing autonomous navigation systems
- Developed 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, Jupyter, Scikit-learn, Apache Spark, ReactJS, VueJS, Node.js, OpenCV, OpenGL

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

## Projects

**Apollo: Machine Learning for Solar Radiation Prediction**    *UGA*

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    *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    *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/    *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/    *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

**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

### CONFERENCES

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|---|---|---|
| 2018 | **Painless Tennis Tracking System**, Wook-Sung Yoo, <u>Zach Jones</u>, Henok Atsbaha, David Wingfield | *IEEE COMPSAC* |
| 2017 | **An Unmanned Aircraft 'See and Avoid' Algorithm Development Platform Using OpenGL and OpenCV**, <u>Zachary Jones</u>, Andrew Morgan, Richard Chapman, Saad Biaz | *CCSC* |

### PRESENTATIONS

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|---|---|---|
| 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* |