

# Daniel Van Zant

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## EDUCATION

Florida State University, Tallahassee, FL

August 2021

Bachelor of Science, Psychology, Minor in Mathematics

GPA: 3.80

## HONORS/AWARDS

Florida State University Dean's List

Fall 2017-Fall 2018

Florida State University President's List

Spring 2021

## SKILLS

Proficient in Python, Cython, SPSS, E-prime

Basic Knowledge of Matlab, R, C++

Proficient in Machine Learning Methods, Algorithm Design and Implementation, Visually Interpreting Statistical Data, Research Study Design, Administrative Lab Duties, Proper Biosafety Procedure.

Basic knowledge of Embedded Systems Design, Writing a Research Paper, Grant-writing.

## RESEARCH PROJECTS

*Using Machine Learning to Identify Video Game Strategy* (In Progress)

**Goal:** To use machine-learning methods to differentiate unique strategies in a video game

**Wider Implications:**

- Allow use of much larger datasets with fewer man-hours in video game studies
- Creates opportunities to do new analyses with previous datasets
- Proof-of-concept that machine learning methods are a viable method to analyze collected videogame data

**Collaborators:** Kyle Harwell (Graduate Student), Dr. Walter Boot, the late Dr. Anders Ericsson

**Expected Publishing Date:** Fall 2022

**Personal Contributions:**

- Initial study design and literature review
- Learned fundamentals of machine-learning to evaluate and establish the most effective method for the research project
- Design of machine-learning method to identify strategies
- Design and implementation in Python of an algorithmic method to identify strategies
- Design and implementation in Cython of a method to turn videogame data into a format easier to hand-code for strategy
- Design of E-prime program to allow research assistant's to hand-code video game data
- Literature review to find and analyze the data in a way that best supports the hypothesis of the study
- Learning and implementing a novel statistical method that best supports the hypothesis
- Regular collaboration, meetings, and research reports, to keep the project on track

## **RESEARCH EXPERIENCE**

### **Research Assistant**

*May 2021-Current*

#### **Machine Perception & Cognitive Robotics Lab, Florida Atlantic University**

- As a rotation project I am developing a novel low-computation form of machine-learning for implementation in an embedded systems context
- Leading the web-monitoring team in compiling the web monitoring section of the *National Drug Early Warning System* annual report
- Implementing novel computational models to predict online discussion of novel psychoactive substances
- Used PyTorch and Neural Networking methods to utilize large-scale natural language processing
- Met regularly with Dr. Barenholtz and Paul Morris (Graduate Student) to determine a unique contribution I could make to the *National Drug Early Warning System* project
- Developed a method to collect a unique data source for the project

### **Research Assistant (Paid)**

*August 2020-April 2021*

#### **Ericsson Expertise Lab, Florida State University**

- Worked on aforementioned *Using Machine Learning to Identify Video Game Strategy* project
- Oversaw Research Assistants to gather data for the study
- Collaborated with Kyle Harwell and Dr. Ericsson to plan and discuss future research studies

### **Research Assistant (Directed Independent Study)**

*January 2020-August 2020*

#### **Ericsson Expertise Lab, Florida State University**

- Created a Python program to shorten data entry by over 20 hours
- Collected and analyzed approximately 40 pages of scientific literature per week to generate ideas for possible studies as well as make suggestions of alterations to current studies
- Conducted an informal study and wrote a full (15 page + 11 page appendix) scientific paper under Dr. Ericsson's guidance

### **Conway Moral Psychology Lab**

*March 2019-June 2020*

#### **Lab Manager, Florida State University**

- Coordinated with PI, graduate students, and research assistants to make sure all in-lab studies were being run properly and consistently.
- Assessed areas where the lab could be improved, brought suggestions for paths of improvement to Dr. Conway, and applied the improvements that he approved
- Kept lab supplies organized and well-stocked
- Trained Research Assistants how to conduct new studies

### **Conway Moral Psychology Lab**

*August 2018-March 2019*

#### **Research Assistant (Directed Independent Study), Florida State University,**

- Collected multiple forms of physiological data (saliva samples, temperature) to record and store
- Asked qualitative questions to participants and coded results based on responses
- Retrieved, supervised, and debriefed participants for experiments multiple times a week
- Communicated with professor, graduate researchers, and research assistants to effectively run experiments

## **RELEVANT CLASSES**

### **Psychology/Neuroscience**

- Cellular and Molecular Neuroscience (Graduate) *Fall 2022*
- Cognitive Psychology *Fall 2020*
- Brain and Behaviour (Introductory Biopsychology/Neuroscience) *Spring 2020*
- Physiological Psychology (Advanced Neuroscience Course) *Fall 2019*
- Psychology Research Methods *Spring 2019*
- Organic Chemistry I *Fall 2018*
- Biology II with Lab *Spring 2018*

### **Mathematics/Statistics**

- Nonlinear Dynamical Systems (Graduate) *Fall 2022*
- Applied Statistics for Engineering/Science *Summer 2021*
- Applied Linear Algebra *Spring 2021*
- Intro to Applied Statistics *Fall 2018*
- Calculus II *Fall 2017*

### **Computer Science**

- Jr. Seminar for Scientific Computation (Learned to computationally parse genetic data) *Spring 2021*
- Data Mining (Neural Networks/Machine Learning Methods) *Fall 2020*
- Programming for Scientific Applications *Spring 2020*
- Continuous Algorithms for Scientific Application *Spring 2019*

## **REFERENCES**

### **William Hahn, Principal Investigator**

*Machine Perception & Cognitive Robotics Lab, Florida Atlantic University*

Supervisor for MPCR Lab rotation.

[whahn@fau.edu](mailto:whahn@fau.edu)

### **Elan Barenholtz, Principal Investigator**

*Machine Perception & Cognitive Robotics Lab, Florida Atlantic University*

Direct Supervisor for *National Drug Early Warning System* project.

[ebarenho@fau.edu](mailto:ebarenho@fau.edu)

### **Kyle Harwell, Ph.D Student**

*Ericsson Expertise Lab, Florida State University*

Primary collaborator for the *Using Machine Learning to Identify Video Game Strategy* project.

[harwell@psy.fsu.edu](mailto:harwell@psy.fsu.edu)

### **Dr. Paul Conway, Principal Investigator**

*Conway Moral Psychology Lab, Florida State University*

Worked in his lab as a Research assistant and worked more directly with him as a Lab Manager

[conway@psy.fsu.edu](mailto:conway@psy.fsu.edu)