MIKAYLA TIMM

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EDUCATION

University of Massachusetts Amherst, 4.0 GPA *September 2017 - Present*
MS/Ph.D. in Computer Science, advised by Subhransu Maji

University of West Florida, 3.99 GPA, Summa Cum Laude *2014-2017*
BS in Computer Science, Minor in Mathematics

RESEARCH EXPERIENCE

University of Massachusetts Amherst September 2017 - Present
Graduate Research Assistant - Computer Vision Research Laboratory

- Researching computer vision techniques for fine-grained visual categorization of animals at the species level and individual level.
- Investigating techniques for detailed texture attribute prediction and generating open-ended, natural language descriptions of textures in images using deep representations.

MIT Lincoln Laboratory June 2017 - August 2017
NLP Summer Research Intern - Group 104 (Intelligence and Decision Technologies)

- Researched natural language processing techniques for generating word embeddings in the multilingual context to enable performing NLP tasks on inherently multilingual data, such as tweets.
- Developed a system for processing multilingual text corpora, training word embeddings, visualizing the resulting high dimensional vectors in a 2D space, and performing intrinsic evaluations on the embeddings, such as analogies and nearest neighbors.

University of West Florida September 2016 - May 2017
Wearable Device Security Research Assistant

- Utilized supervised learning algorithms to classify biometric data obtained from simulated wearable device cyber attacks.
- Helped collect and label wearable device data, performed simulated device synchronization attacks over Bluetooth, and built models to understand what data was obtained from the synchronization packets.

University of West Florida May 2016 - August 2016
Summer Undergraduate Research Scholar

- Researched supervised machine learning techniques for predicting outcomes of animals in shelters.
- Performed data analytics on animal shelter data to observe relationships between animal attributes and outcomes.

University of Massachusetts Amherst May 2015 - August 2015
REU Student Researcher - Computer Vision Research Laboratory

- Researched computer vision algorithms for identifying individual jaguars in images to assist ecologists with their conservation efforts.
- Worked with the UMass Department of Environmental Conservation to collect and label images.
- Implemented a system for performing automatic jaguar identification invariant to changes in scale, rotation, translation, illumination, and partial occlusion.

PROGRAMMING LANGUAGES AND OTHER PROJECTS

Languages Python, MATLAB, C, Java, C#, R, SAS, SQL, LISP, Prolog

Projects
Image Captioning with LSTM Networks
Plagiarism detection program for analyzing similarity between files
Programmed **iRobot Create** to give university tours using sensors and speakers
Shell program for parsing commands & running distributed computing applications
Queue simulation program for analyzing throughput for service channels
Genetic algorithm approach to solving the Traveling Salesman Problem
LL(1) **recursive descent parser**, generating assembly code for arithmetic operations
Library of various **numerical approximation algorithms**
Pokemon Go-style mobile app backend for introducing students to UWF campus
3D competitive game "Mathematicats" for helping middle schoolers learn math

PUBLICATIONS AND PRESENTATIONS

- **Timm, M.**, Maji, S., Fuller, T. (2018). **Large-Scale Ecological Analyses of Animals in the Wild using Computer Vision.** Poster presentation in *CVPR Workshop on Fine-Grained Visual Categorization (FGVC5) and Women in Computer Vision Workshop (WiCV)*, 2018.
- **Timm, M.**, El-Sheikh, E. (2017). **An Evaluation of Machine Learning Algorithms for Prediction of Shelter Animal Outcomes.** In A. Bossard, G. Lee, & L. Miller (Eds.), Proceedings of 32nd International Conference on Computers and Their Applications, March, 20-22, 2017, Honolulu, Hawaii, USA. Winona, MN, USA: ISCA.
- Reichherzer, T., **Timm, M.**, Earley, N., Reyes, N., & Kumar, V. (2017). **Using machine learning techniques to track individuals & their fitness activities.** In A. Bossard, G. Lee, & L. Miller (Eds.), Proceedings of 32nd International Conference on Computers and Their Applications, March, 20-22, 2017, Honolulu, Hawaii, USA. Winona, MN, USA: ISCA.

HONORS AND ACHIEVEMENTS

CVPR Women in Computer Vision Travel Grant Recipient — *Summer 2018*
CRA-W Grad Cohort Workshop Participant — *Spring 2018*
Edward Riseman and Allen Hanson Scholarship, UMass Amherst CICS — *Fall 2017*
1st Place, Most Technical, and Most User-Friendly Project in UWF Codefest — *Spring 2017*
Grace Hopper Celebration of Women in Computing (GHC) Scholar — *Fall 2016*
Nick Johnson Academic Scholarship, UWF Computer Science — *Fall 2016*
IT Performance Scholarship, UWF Computer Science — *Fall 2016*
Outstanding Undergraduate Student in Computer Science Award, UWF — *Spring 2016*
Best Student Project in Computer Science, UWF Office of Undergraduate Research — *Spring 2016*
1st Place in Division 2 ACM Southeast ICPC — *Fall 2015*
Nautilus Scholarship, UWF — *Fall 2014-Spring 2017*
Florida Bright Futures Academic Scholars Award — *Fall 2014-Spring 2017*

SERVICE

Girls Inc. Eureka! "Introduction to Creative Computing" Workshop Volunteer — *Summer 2018*
UMass Amherst CS Women Graduate Member — *Fall 2017-Spring 2018*
UWF Code & Tech Stars Workshop Volunteer — *Spring 2017*
UWF ACM President and Founder — *Fall 2016-Spring 2017*
UWF ACM-W President and Founder — *Fall 2016-Spring 2017*
PACE Center for Girls (Pensacola, FL) Summer Coding Workshop Instructor — *Summer 2016*