FELIX A. SOSA

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EDUCATION

BS | Spring 2019 | University of Central Florida

· Major: Computer Science

BS | Spring 2019 | University of Central Florida

· Major: Mathematics – *Pure Track*

HONORS

Louis Stokes Alliances for Minority Participation (LSAMP) Scholar

Dean's List – Fall 2016

RESEARCH EXPERIENCE

Research Assistant | Evolutionary Complexity Lab | 01/16 – Present

· Working under Dr. Kenneth Stanley developing one of the first open-ended neuroevolutionary algorithm allowing artificial neural networks to complexify into optimal topologies without a priori guidance.
Advisor: Dr. Kenneth Stanley (UCF)

Research Assistant | Kolpashchikov Lab | 04/15 – 11/15

· Worked under Dr. Dmitri Kolpashchikov designing and testing novel DNA architectures to be used as computational structures in future DNA computers.
· Focused on experimental and theoretical optimization of DNA associates for the design of a DNA nanothermometer.
Advisor: Dr. Dmitry Kolpashchikov (UCF)

OUTREACH

Teaching Experience

· Quantitative Methods Workshop | MIT | Teaching Assistant | 01/01/17 – 01/08/17
  o Lectured students on the basics of programming with Python and assisted in teaching students MATLAB basics, and image processing and machine learning in MATLAB.

· Introduction to Computational Neuroscience | Orlando Melrose Center | Lecturer | 05/06/15
  o Lectured on the introductory concepts of computational neuroscience. Covered basic neurobiology, neural coding, basic neuroanatomy, and brain-machine interfacing.

· Lecture and Workshop Series on Artificial Intelligence | UCF | Lecturer & Teaching Assistant | 09/19/16-11/28/16

- Sponsored by the NSF STC, The Center for Brains, Minds, and Machines at MIT. Delivered lectures on the connectionist, probabilistic, and evolutionary perspectives in artificial intelligence research. Coordinated and ran workshops that allowed UCF students to program artificial intelligence systems based on the concepts spoken of in the lecture prior. Students built deep neural networks ran against the MNIST benchmark, MDP planners to solve the Grid World problem, and evolved a neural network using NEAT.

Student Organizations

- Association for Computing Machinery UCF Chapter – Special Interest Group for Artificial Intelligence (SIGAI) | Coordinator | 08/01/16 – Present
  - Organized a semester long lecture and workshop series to introduce undergraduate and graduate UCF students to perspectives and foundations in artificial intelligence. Lecture series was sponsored by the NSF STC, The Center for Brains, Minds, and Machines at MIT.

- Synthetic Biology @ UCF | Founder & Vice-President | 08/01/15 – Present
  - Founded and serve as the vice president of a student organization dedicated to giving undergraduate and graduate UCF students experiences in the field of synthetic biology. Host and give lectures, TA workshops, and raise funding for the organization.

- Rhetoric Society @ UCF | Founder | 09/01/15 – Present
  - Founded an organization for those who are interested to gather and speak about contemporary issues and topics in civic engagement and rhetoric every other week.

Invited Talks

- DNA Nanotechnology: A Breakthrough for Us All | Nerd Nite | Orlando, FL & Miami, FL
- Advanced Tech Startups | University of Central Florida | Orlando, FL
- We Don't Belong Here | Yuri's Night | Orlando, FL
- The Search of The Century | Pecha-Kucha | Orlando, FL
- Killing The Pop Sensation of A.I. | Nerd Nite | Jacksonville, FL
- The Next Step | Orlando Science Center | Orlando, FL

Community Volunteering

- Pi Day Adventure Leader | Math, Science, and Pi(e) Festival | Coalition for The Homeless | Orlando, FL
  - 03/14/15: Ran a booth where students could wear EEGs I designed and measure their brain waves as they doodled on paper. Visualized the data for them to see and spoke about the importance of computer science and neuroscience.
  - 03/14/16: Ran a booth where students could talk to a Markov bot via text. Let this serve as an introduction to artificial intelligence and computer science.

Entrepreneurship

- Cortex, LLC | Cofounder | 11/01/14 – 11/01/16
  - Founded and served as the lead machine learning engineer for a neurotechnology startup based in Orlando, FL. Helped develop novel electroencephalograms (EEGs) that would be coupled with novelty-search based feature extraction and contemporary deep learning based feature translation algorithms to be used as brain-computer interfaces (BCIs). The BCIs were prototyped and used to control prosthetic arms via voluntary movement by measuring signals

via the EEG around the motor cortex of patients.