Rachel St. Clair

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Vision

How can the differences in man and machine guide development of machine perception to supplement mankind?

Objective

Innovative thinker focused on biomedical applications of deep learning and machine perception for global advancement.

Presentations, Proceedings, and Papers

Robishaw J., StClair R., et al. "Early Detection of COVID-19 Onset Symptoms with OURA Device." Current works.

StClair R., et al. "Developmental Data Augmentation." Current works.

StClair R., Teti M., et al. "Autoimmune Antibody Binding Motif Prediction Model with LSTMs." Current works.

Perez N., StClair R., et al. "Birdsong Grammar Structure Identification from Siamese Networks." Current works.

Neil Sachdeva, StClair R., et al. "Using Conditional Generative Adversarial Networks to Reduce the Effects of Latency in Robotic Telesurgery." IEEE International Conference on Omni-layer Intelligent systems. 2020 March 6; Barcelona, Spain. Conference Proceedings. Under review.

Morris P., StClair R., et al. "Predicting Binding from Screening Assays with Transformer Network Embeddings." Journal of Chemical Information and Modeling. Dec. 2019. Under Review

StClair R. "Translating Images with Generative Adversarial Networks" Data Science and Analytics Conference. 2019 Nov. 2; Boca Raton, FL. Workshop.

St.Clair R., Hahn W., et al. "Artificial Intelligence – What Does the Future (and Today) Hold?" Women Corporate Directors South Florida Chapter. 2019 Oct. 30; Boca Raton, FL. Panel discussion.

St.Clair R. "General Adversarial Networks: Brief HIstory and Overview." Max Plank Academy. 2019 Oct. 15; Boca Raton, FL. Guest lecture.

StClair R. "General Adversarial Networks. " Machine Perception and Cognitive Robotics Deep Learning Short Course. 2019 Aug 13-Aug 16; Boca Raton, FL. Workshop.

StClair R. "Post-Analytics: General Statistics from Your Model. " Machine Perception and Cognitive Robotics Deep Learning Short Course. 2019 Aug 13- Aug 16; Boca Raton, FL. Lecture.

Morris P., StClair R., et al. "Virtual High-Throughput Screening; A Combined Deep-Learning Approach. " American Chemical Society National Conference. 2019 Mar 31- Apr 4; Orlando, FL. Lecture.

StClair R., et al. "Gold Particle Labeling with GANs" Max Plank Academy. 2019 Jan- May; Jupiter, FL. Workshop lead.

StClair R., Teti M., et al. "Self-Organizing Map Methodology for Sorting Differential Expression Data of MMP-9 Inhibition." 2019. biorxiv 586628; doi: https://doi.org/10.1101/586628.

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StClair R., Dawson-Scully K., et al. "C.eVICHE: C.Elegan Visual Implementation of Computational Heuristic Experiments." Poster presented at: Max Plank Sunposium Conference; 2019 Mar 4-6; West Palm Beach, FL.

Teti M., StClair R., et al. "Target Binding and Sequence Prediction With LSTMs." 2018. bioRxiv 504415; doi: https://doi.org/10.1101/504415.

StClair R., Fields G., et al. *Self-Organizing Degradomics Model: SOMMMP9. Poster presented at:* University of Miami Neuroscience Day Conference; 2018 Dec 7; Miami, FL.

Teti M., StClair R., et al. *Deep learning sequence prediction for synthetic biology and genetic engineering. Poster presented at:* International Genetically Engineered Machine Competition; 2017 Nov; Boston, MA.

Gil M., StClair R., et al. *Temporal ontogeny of epileptogenesis in a model of adult-onset, spontaneous Seizures.* Poster presented a*t:* FAU Undergraduate Research Symposium; 2017 Mar; Boca Raton, FL.

Education

Florida Atlantic University	Aug. 2018 - Fall 2021	Florida Atlantic University	May 2013 - Dec. 2017
PhD, Complex Systems and Brain Sciences		*Bachelors of Science degree, majoring in Biology*	

Experience

Department of Homeland Security PEPI-G Internship   May 2019 - January 2020
- *Utilize Amazon Web Services and Created Report*
- *Cultivate prototype for two seperate computer vision problems*

Deep Learning Short Course Lead Organizer, Coordinator, and Instructor   March 2019 - August 2019
- *Develope and carryout organization of course and logistics*
- *Lead instructor for generative adversarial networks lecture, training CNNs, Post-Analysis results*

MPFI Mentor   January 2019 - May 2019
- *Computer vision project designer and execution management*
- *Mentor to two students in general programming and project development*

Machine Perception and Cognitive Robotics Lab   May 2017 - Current
- *Biomedical solutions using deep learning*
- *Innovative research team dedicated to machine perception and cognitive perceptions*

Alkermes Pharmaceutical Technician   March 2017 - June 2017
- *Bulk Line 2 Manufacturing Associate*

Student Athlete Tutor   October 2017 - Dec. 2018
- *Biology tutor at Florida Atlantic University for student athletics department*
- *Developing lesson plans and inspiring students to reach their full potentials*

OwlGems   May 2017 – November 2017
- *Research team using synthetic biology to detect counterfeit antimalarial drugs*
- *Team centered group that relies on self-disciplined individuals' cooperation*

Undergraduate Research Trainee   Aug 2016 - May. 2017

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- *Assist in data gathering, analysis, lab techniques (PCR, Gel Electrophoresis, solution make-up, etc.),*
- *and lab animal care*
- *Train other undergraduate research trainees in data analysis and animal care*

Neurosurgery Shadow   May 2015 - Aug 2015
- *Observed clinical and office task carried out by Dr. Eric Peterson*

Neurosurgery Floor Volunteer   Aug 2014 - May 2015
- *Observed daily care in 7th floor neurosurgery at Boca Regional Hospital*
- *Took initiated to help Rn's whenever possible by organizing, cleaning, and anticipating needs*

Skills

Python	Ubuntu/ Widows
Data Pre-Processing Libraries	Docker
Pytorch	Video and Text Processing
Tensorflow	Latex/Overleaf
Computer Vision techniques	Amazon Web Services SageMaker
Generative Adversarial Networks	Biologics Data
Arduino	C++

Certifications

Certified Phlebotomist Technician	NHA 6/14/2016
Phlebotomy Training	First Response Training 4/17/2016
Blood borne Pathogens Training	First Response Training 4/17/2016
Basic Clinical Skills	FAU May 2015
CNA Training	First Response Training February 2015
EKG Training	First Response Training 2/22/2014
Food Handler Certificate	Myfloridafoodhandler.com 1/27/2013

Organizations

Robotics Club @ FAU   2019-Current

Bioinformatics Club @ FAU   2017-2018

American Medical Women's Association   2016-2018
Member of elected board: Studio AMWA Director (local branch title)

Phi Delta Epsilon   2015-2016
Medical co-ed fraternity, marketing team member

American Medical Student Association   2014 - 2015

References

Available upon request