Esteban Segarra Martinez
Candidate PhD Graduate Student

Orlando, FL
University of Central Florida
estebansegarra@knights.ucf.edu
863 – 399 – 1045
GitHub: https://github.com/OvercodedStack
Website: https://overcodedstack.github.io

EDUCATION:

University of Central Florida; Orlando FL (Fall 2023– Spring 2024)
PhD Computer Science (3.67 /4.0)
University of Central Florida; Orlando FL (June 2022)
MS Computer Science (3.67 /4.0)
Florida Polytechnic University, Lakeland FL (May 2019)
BS Computer Engineering (Concentration on Machine Intelligence)
GPA (3.81 / 4.0) Magna Cum Laude

PUBLICATIONS

- Segarra Martinez, E., Maldonado, S. V., Wu, A. S., McMahan, R., Liu, X., & Oakle, B. (2022 July). Effects of Imputation Strategy on Genetic Algorithms and Neural Networks on a Binary Classification Problem. *ACM GECCO 2022*.
- Segarra Martinez, E. Wu, A.S., & McMahan, R P. (2022 March). Research Trends in Virtual Reality Locomotion Techniques. *IEEE VR 2022.*
- Segarra, E. & Towle Jr., B. (2018 March). Application of an Augmented Reality Device as a Rangefinder and Odometry Source*. International Society of Computers and Their Applications*.
- Segarra, E. & Towle Jr., B. (2018 October). Simulating an Unknown Environment with an Integrated Physical and Virtual Space. *27th Proceedings of the International Conference on Software Engineering and Data Engineering.*
- Segarra, E. & Towle Jr., B (2017 October). Investigating the Feasibility of using a Microsoft HoloLens as a Robotic Sensor and Odometry Source. *26th Proceedings of the International Conference on Software Engineering and Data Engineering.*

POSTERS

- Bagchi, S., Segarra, E., Marvel, J., Van Wyk, K., & Zimmerman, M. (2019 March). Metrological Testing of Wearable Technology and Virtual Reality for Precision Robot Control. *Poster presented at: HRI IEEE/ACM conference in Daegu, Korea.*

PAPERS REVIEWED

- Reviewed two papers for the IEEE VR 2022 Workshop: 3D Content Creation for Sim. Training (TrainingXR)

VOLUNTEER ACTIVITIES

- Participated in Camp Connect 2022 at UCF for teaching high school students with the topic of “Visualizing Point Clouds”

LATEST PROFESSIONAL EXPERIENCE

University of Central Florida, Orlando, FL (January 2022 – Present 20hr/week)
Graduate Research Assistant for Dr. Ryan McMahan

- Research and analyze data collected from laserscanning processes from Leica ground and building laserscanners
- Write and publish papers related with locomotion in virtual reality
- Follow up with publications, continue developing VR applications within research interest
- Expand research related with current interest of the I-SPIES research group

University of Central Florida, Orlando, FL (August 2021 – December 2021 20hr/week)
Graduate Teaching Assistant for the Computer Science Department at UCF – COP3223C Intro to Programming W/ C

- Graded homework and exams
- Office hours and emailed questions
- In-class laboratory hours with programming examples
- Consult and advice the professor for better strategies to apply in the class

University of Central Florida, Orlando, FL (May 2021 – August 2021 20hr/week)
Graduate Teaching Assistant for the Computer Science Department at UCF – CNT4714 Enterprise Computing

- Graded homework
- Office hours and emailed questions
- In-class laboratory hours with programming examples

National Institute of Standard and Technology (May 2020 – May 2021 40hr/week)
Computer Scientist in the MML Laboratory

- Front-end developer and support. API integration between front-end and back-end.
- Daily meetings with administration for project support and end-requirements.
- Report and provide consultatory advice on office matters.

University of Central Florida, Orlando, FL (January 2020 – May 2020 20hr/week)
Graduate Research Assistant for the Artificial Intelligence Laboratory at UCF

- Research writer and primary developer for codebase involving incorporation of threading policies from operating systems into multi-agent systems for studying performance and efficiency.
- Paper write-up and completion is scheduled for end of August for Sep – Oct for AAAI or IEEE.

University of Central Florida, Orlando, FL (August 2019 - December 2019 20hr/week)
Graduate Teaching Grader for course 2545C-01 for Fall of 2019

- Support for undergraduate students in database concepts through one-to-one help.
- Assisted with a refresher to MySQL and database table design and implementation.

National Institute of Standards and Technology, Gaithersburg, MD (May 2019 – August 2019 40hr/week)
Summer undergraduate research fellow (SURF): Intelligent Systems Division

- Developed a framework independently under guidance of Dr. Jeremy Marvel for integrating a human-machine interface for a Universal Robotics 5 through an Android Application on a tablet.
- This robot interface was developed with the intent of studying user behavior by observing the actions the user used, the ability to change layout, and change the type of controls available to the user.
- Primary codebase was through C# scripting and a C++ server-side connection to support networking between PC and robot.(https://github.com/OvercodedStack/CRPI_MIDDLEWARE_INTEGRATION-Summer-of-2019-NIST) Report and final presentation at NIST SURF colloquium 2018. “Adaptive Metrics and Performance Analysis Tool for Human-Robot Interaction”.

National Institute of Standards and Technology, Gaithersburg, MD (May 2018 - August 2018 40hr/week)

Summer undergraduate research fellow (SURF): Intelligent Systems Division

- Worked independently under guidance of Shelly Bagchi with the HTC Vive and Manus VR gloves and integrating their control into a Universal Robotics 5 robotic arm and demonstrating functionality.
- Primary codebase was written through C# scripting in unity with a C++ server-side client for communication between PC and robot.
- Codebase backed-up and maintained at GitHub (https://github.com/OvercodedStack/C-Sharp-API-Implementation-ManusVR). Report and final presentation at NIST SURF colloquium 2019 "Integration of Wearable Sensors into Virtual and Augmented Reality Interfaces for Human-Robot Interaction (HRI)".

MEMEBERSHIPS

- ACM SIGEVO 2022
- Member and Graduate Student for Evolutionary Computation Laboratory @ UCF
- Research Graduate Student for the XRT Laboratory @ UCF

HONORS

- Winner of National Institute of Standards and Technology's (NIST) Summer Undergraduate Research Fellowship (SURF) (Summer of 2018 and 2019)
- Awarded Grant from NASA through the Florida Space Grant Consortium (Fall of 2016 - Spring 2017)
- Presenter for Faculty Research on Renewable Energy and Sustainability Show Case Hour (FRRESSH Fall of 2017)
- Winner of Finalist for Best Paper Award at Software Engineering and their Applications (SEDE) Conference

PROGRAMMING SKILLS

- Machine learning
  - Experience with Keras, PyTorch, and Weka
- Point cloud manipulation
  - Cleaning, preparation, and refinement of a point cloud
  - **Development of tools for manipulating point clouds** (RecolorCloud)
- Language experience:
  - C, C++, C#, VHDL, Verilog, Assembly, JavaScript (ExtJS), LUA, Java, SQL, and HTML5
- Specialty programming/other:
  - Computer vision, microcontrollers, and server setup and configuration, GitHub version control
  - PyQT5 UIs for python
- MatLab:
  - Scripting and equation handling for data and signal processing
- Virtual reality applications
  - Experience with Unity with AR package Vuforia and VR package SteamVR
  - Developed companion apps for robotic API connectivity
- Website Development
  - Front and backend development experience (1 year)
- Artificial Intelligence & Evolutionary Computation Experience
  - Have setup neural networks for big data problems
  - Setup scenario problems for use with genetic algorithms
- Network integration:
  - TCP/UDP with C#, C++, and/or Python
  - Web socket programming
- ROS programming
  - Package creation, framework setup, and troubleshooting for robot operating system framework