Christopher A Okonkwo

Computer Scientist

Contact

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Skills

Programming/Scripting Language: (Familiar) Python, C#, Java, C++, C, HTML/CSS, PHP, MATLAB
Frameworks/Tools: Git, Unity game engine, Apache Spark

Interests

Computer Vision, Cybersecurity, Big Data analysis, Machine learning, Software Engineering/Development, Robotics, Web development, Networking/Information Assurance, Programming

Additional Information

National Society of Black Engineers, Member
Association for Computing Machinery, Member
Society of Women Engineers, Member
Volunteer judge Utica College Regional Science Fair, Utica, NY
Volunteer judge FIRST LEGO League Championship, Rome, NY
Train middle and high school student on Tekkotsu robot programming and NXT robot programming

Education

2014-08 - 2017-05 **Master of Science: Computer Science and Cyber-Security**

Norfolk State University - Norfolk, VA

- Thesis: Machine Learning Classification on Kaggle Malware Dataset
- Coursework: Data Communication, Computer Security, Operating System, Computer Architecture, Network Defense

2011-08 - 2014-06 **Bachelor of Science: Computer Science (Hons)**

Norfolk State University - Norfolk, VA *GPA: 3.55*

Work History

2017-08 - Current

Computer Scientist/Project Leader

Air Force Research Laboratory, Rome, NY

- Contribute to a basic research initiative, applied XR to targeting, 3D visualization, computer vision, M&S, and data manipulation research.
- Develop novel approaches using virtual environments to generate large amounts of high quality training data for DL classifier.
- Investigate available resources to develop more useful project plans.
- As Deputy Manager oversee high cost program, generated optimization algorithm for target recommendations.
- Reviewed SCRIMMAGE multi-agent simulator for UAV simulation.
- Utilize Natural Language Processing (NLP) techniques to cluster similar entities between tagged and untagged datasets.
- Apply machine learning techniques to perform multi-label text classification.
- Design AR/VR models using Unity game engine.
- Collected LiDAR point cloud data from diverse sources.
- Coach, develop and motivate team members, providing coaching and mentoring to junior computer scientists on AR/VR data visualization.
- Developed tools and technique addressing the deficiencies of visualization, precision targeting tools, object classification and identification.
- Collaborated with internal stakeholders, identifying and gathering requirements for project needs.
- Manage Modeling and Simulation initiative in AFSIM as part of an integrated environment.
- Mentors summer interns to the steps of scientific research, and the importance of collaboration.
- Built an M&S/computer vision Laboratory, grew in-house R&D team from 1 at time of hire to 7

2014-08 - 2017-05

Graduate Research Assistant

Norfolk State University IA-REDI, Norfolk, VA

- Supported research and development efforts to create new products, equipment and processes.
- Apply machine learning algorithm or techniques on malware sample.
- Proposed methods to detect, extract features and categorize malware sample.
- Developed cross-platform smart phone application for HackU Competition.
- Designed cloud based virtual lab with virtualization software.
- Worked on ML classification project, evaluating effects of various ML algorithms on malware dataset.
- Researched information regarding Malware to assist professors with academic pursuits.
- Prepared materials for reports, presentations and submission to peer-reviewed journal publications.

2016-06 - 2016-08

Student Research Intern

Air Force Research Laboratory, Rome, NY

- Designed project objectives and benchmarks
- Worked on Software Epistemology project, studying and analyzing hash functions.
- Researched information regarding hash functions to assist program managers with project pursuits.
- Prepared materials for reports, presentations and submission for journal publications.
- Conducted performance analysis on multiple hash algorithms.
- Conducted research on non-cryptographic hash functions
- Performed statistical, qualitative and quantitative analysis of multiple hash algorithms.

2015-05 - 2015-08

Student Researcher Intern

Lawrence Livermore National Laboratory, Livermore, CA

- Conducted data analysis and implemented Machine Learning techniques.
- Generated data models, performed malware groupings into families based on file contents and characteristics.
- Used python packages for feature extractions on hashed malware byte files and assembly files.
- Performed model training on various malware datasets
- Used ML techniques to perform qualitative and quantitative analysis of malware data.

2013-06 - 2013-08

Undergraduate Research Intern

Carnegie Mellon University, Pittsburgh, PA

- Supported research and development efforts to create new products, equipment and processes as Robotics Institute Summer Scholar (RISS).

- Conducted robot system development design and lifecycle development design.
- Assisted Multiple 3D cameras calibration for intelligent workcell project with creating efficient algorithm to perform morphological operation for calibrating of multiple 3D cameras.
- Supported hardware and software installation, configuration, testing and debugging.
- Collaborated with senior research scientist as part of intelligent workcell project.
- Researched various subjects that were related to project and presented information to senior researcher.
- Conducting analysis and implementing resolution to problems and issues, as well as prepare and present reports.

2012-05 - 2012-07

Summer Student Intern

University of Pittsburgh, Pittsburgh, PA

- Supported research and development efforts to create new products, equipment and processes as Quality of Life Technology Research Experience for Undergraduate (REU).
- Reviewed firmware of Physical Activity Monitor System's wheel rotation Datalogger (PAMS-DL).
- Evaluated potential subject participants to assess suitability for planned studies.
- Developed Android plug-in based on existing applications.
- Collected and analyzed data from PAMS-DL devices.
- Participated in testing of PAMS.

Awards and Conferences

- AFRL/RI Early Career Award nominee (2022)
- AFRL/RI Research Team Award Winner (2018, 2021)
- AFRL/RI 3rd Quarter Civilian Category II Award Winner (2019)
- International Conference on Computational Science and Computational Intelligence, Las Vegas, NV (2017)
- Cincinnati-Dayton INFORMS Symposium, Dayton, Ohio (2016)
- Paper publication presentation, Dayton, Ohio (2016)
- Won best in show in Dominion Enterprise HackU (2015)
- Virginia Commonwealth University Graduate Education Day Panelist, Richmond, Virginia (2015)
- Tapia Conference, Boston, Massachusetts (2015)
- Second place Robotics Competition, Seattle, Washington (2014)
- RESNA conference paper finalist, Seattle, Washington (2013)