Leron K. Julian

PhD candidate in ECE, Carnegie Mellon University

5000 Forbes Ave, Porter Hall,
Pittsburgh PA 15217

LeronJulian@Hotmail.com
+1 (321) 948-8779 | LeronJulian.com

Research Interests

My research interest lies in the field of computer vision. From a higher-level view, using computer vision and machine learning in the application of understanding the interaction of light with materials in cameras.

Education

Carnegie Mellon University 2019 - Present

- Doctorate of Philosophy in Electrical and Computer Engineering
- Advised by Prof. Aswin Sankaranarayanan (ECE, CMU)
- National GEM Consortium Fellow

Morehouse College 2015 - 2019

- Bachelor of Science in Computer Science
- Cumulative Grade Point Average: 3.30/4.0
- Ronald E. McNair Scholar, Bonner Scholar, Microsoft Scholarship Recipient

Internship & Experience

Idaho National Laboratory, Idaho Falls, Idaho Summer 2019
Nuclear Power Plant Data Analyst Intern

- Analyzed data of vibration signals to automate the manual actions of checking on the status of the nuclear sensors.
- Using Artificial Neural Networks (ANN) and Data Science Techniques, developed a model to predict crack length in various aluminum specimens given piezoelectric (PZT) sensor data and constant fatigue loading profiles.
- Assisted in developing the model for the online monitoring (OLM) of Nuclear Power Plant assets such as generators using Machine Learning and Data Science.

NBCUniversal, New York, New York Summer 2018
Software Engineer Intern

- Used Node.js, JavaScript, GraphQL, MongoDB, and React.js to upgrade and update existing larger scale CNBC website from old technology powered by PHP and MySQL through Agile development.
- Using the same Full-Stack: Began initial development for website for the reboot of the Deal or No Deal show.
- Developed Front-end components using React.js and CSS on dealornodeal.cnbc.com
- Experienced configuring and documenting computer systems and server infrastructures that power web applications, client-server applications and online services using REST APIs.

PayPal Led Software Engineering Course, Morehouse College Fall 2018

- CSC 435 - Software Engineering Course taught by PayPal Employees.
- Developed REST Application in Java using Spring-Boot as REST Framework.
- Collaborated in teams using Agile methodologies.
- Utilized Git/Github for all assignments.

Ronald E. McNair Scholar, Morehouse College Summer 2017
Researcher

- Program designed to prepare undergraduate students for doctoral studies through involvement in research and other scholarly activities.
- Developed a conversational agent mentor that uses short message service (SMS) for dialogue as a virtual mentor.
- This was used to mentor undergraduate computer science majors at a Historically Black College (HBCU) who are considering pursuing a graduate degree in computing.
- This research project was developed using JavaScript, Node.js, the Twilio API, and Heorku.

Skills

Programming Languages:
- C++ (Proficient), Python (Proficient), Java, R
- HTML (Proficient), JavaScript, CSS, React.js, Node.js, GraphQL, MongoDB

AI Related:
- PyTorch, TensorFlow, OpenCV, Keras, Pandas, Dialogflow, Haar Cascade Classifier, Scikit-Learn

Operating Systems:
- Mac OS, Windows OS, Ubuntu

IDEs:
- Sublime, RStudio, Visual Studio Code, XCODE

Other:
- Git/Github, Heroku, Terminal, Twilio API, Docker, MongoDB

Projects

Black & White to Color Image Computer Vision Algorithm **Spring 2019**
- Using a Convolutional Neural Network (CNN) developed an algorithm to convert black and white images to color.
- Utilized a pre-trained CNN by transfer learning the last layer to a specific category of images.
- Developed in Python using Tensorflow

Gender Recognition Algorithm **Fall 2018**
- Developed an algorithm to classify an image of an individual as a male or female using Computer Vision and Machine Learning.
- Developed in Python using OpenCV, KNN Algorithm, Supervised Learning, Datasets, and other Classification ML Models.
- Developed Graphical User Interface using Python's Tkinter GUI Interface.

Tic-Tac-Toe Artificial Intelligence Algorithm **Fall 2018**
- Collaborated in a Tic-Tac-Toe AI project that learns to play like a user by utilizing the Minimax algorithm.
- Developed in Python using Data Science and Machine Learning Techniques.

Embodied Conversational Agent Virtual Mentor **Summer 2017**
- Conducted and published research as a Ronald E. McNair Scholar with aid of Research Mentor Kinnis Gosha, PhD.
- Using Natural Language Processing Techniques, developed a Virtual Mentor Embodied Conversational Agent using Short Message Service and compared the effectiveness of it to a human mentor.
- Used the Twilio API, TwiML, JavaScript, Node.js, and hosted on Heroku application hosting.

Scholastic Achievements

- Recipient of National GEM Consortium Fellow, 2019.
- 2-Time recipient of Microsoft Tuition Scholarship, 2016 & 2017.

Conferences and Workshops

- Invited talk on "Using SMS as an Interface for a Virtual Mentoring System" at the Association of Computer and Information Science/Engineering Departments at Minority Institutions, 2018, held in New Orleans, Louisiana.

- Presented paper on "The Development of a Conversational Agent Mentor Interface Using Short Message Service" at the Association for Computing Machinery Special Interest Group on Management Information Systems, 2018, held in Buffalo – Niagara Falls.

- Presented poster on "Using SMS as an Interface for a Virtual Mentoring System" at the Association for Computing Machinery Southeast, 2018, held in Richmond, Kentucky.

Teaching Experience

- TA for "Programming II" at Morehouse College under Prof. Amos Johnson, 2019.
- Instructor for C-SCORE Program teaching Marine ROTC Students Python and Computer Vision, 2019.

Publications

Leron Julian, Kinnis Gosha, Earl W. Huff Jr., "The Development of a Conversational Agent Mentor Interface Using Short Message Service", ACM SIGMIS, 2018.

Leron Julian and Kinnis Gosha, "Using SMS as an Interface for a Virtual Mentoring System", ACMSE, 2018.