MARC MAILLOUX

Data Analyst | Modeling and Simulation Engineer

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EDUCATION

UNIVERSITY OF CENTRAL FLORIDA

Masters of Science Modeling and Simulation — May 2019

- Focus | Intelligent Systems, Machine Learning, and Data Science
- Projected GPA | 3.7

Bachelor of Science Mechanical Engineering — May 2017

- Senior Project | Micro UAV Design Competition

RELEVANT EXPERIENCE

Perspectives on Modeling and Simulation Aug 2018 - May 2019
Understanding Humans for Modeling and Simulation
Graduate Teaching Assistant (GTA)

- Provide mentorship opportunities for students through virtual support, open office hours, and availability during class hours, totaling 20 hours per week
- Facilitate and grade Online discussion assignments, where students develop industry understanding through the analysis of peer reviewed research

Team Solutions Dental Lab Apr 2018 - Aug 2018
3D Printing and Manufacturing Engineering Intern

- Developed optimal training techniques and routine procedures for a lean manufacturing environment through the creation of training manuals and the functional organization of the workspace
- Maintained and operated the Form2, Kulzer Cara, and Stratasys Objet 3D printers; and utilized Sum 3D CAM software to operate the Roland 50 and 51 six-axis CNC

Artistic Entertainment Services Jul 2017 - Oct 2017
3D Design Intern

- Utilized Solidworks 2017 to design 35+ mechanical stage set drawings for in-house fabrication
- Collaborated with entertainment clients like Disney and Universal Studios, as well as the internal design team, to develop cross-disciplinary ideas and creative solutions

RESEARCH PRESENTATIONS

"Artificial Intelligence: The New Electricity"
Independent, graduate-level research with peer presentation

Intelligent Systems Case Study
Independent, graduate-level research with peer presentation

SKILLS

Manufacturing

- CNC Machines | Three and six-axis
- 3D Printers | Form2, Kulzer Cara, Stratasys Objet, CR10, TronXY X5S, Flashforge Dreamer
- Solidworks, Fusion360

Electronics

- ESP32
- Raspberry Pi | Intel Movidius Neural Compute Stick
- Fritzing for custom PCB design

Software

- Python 3 | Scikit Learn, Open CV, NumPy, Pandas, Tensor Flow
- R | Caret, GGPlot2
- Node-Red
- Arduino IDE

COURSEWORK AND PROJECTS

Hardware and Prototyping for Modeling and Simulation
Embedded Machine Learning Prototype

- Leverage ESP32 and Raspberry Pi skills with MQTT protocol to develop a custom PCB with 3D printed enclosure
- Classify environmental data; use the Intel Movidius Neural Compute Stick to develop a deep CNN algorithm for object detection and classification

Intelligent Tutoring Systems
Pranayama Meditative Breathing Tutoring System

- Develop an adaptive system capable of measuring and responding to user input by classifying learner attributes

Machine Learning
Classification of Mnist Dataset Images

- Built the K Nearest Neighbor Algorithm to analyze Mnist Dataset; applied k-fold cross validation and developed a sliding window algorithm to optimize the solution

Classification of Glass Data

- Used SVM algorithm to analyze UCI glass dataset and find optimal hyperparameters; implemented one-vs-one and one-vs-all approach

Natural Language Processing
Classification of Cyberbullying

- Labeled, tokenized, and embedded (using n-grams) over 8,500 observations of cyberbullying to create a dataset; trained model to classify 4 different cyberbullying labels