# MARC MAILLOUX

## Data Analyst | Modeling and Simulation Engineer

**Phone** (720) 369-7052
**Address** 1135 N Ogden Street (Unit 15)
Denver, CO 80218
**Email** marc@rage-industries.com
**GitHub** https://bit.ly/2F3wCVx

## EDUCATION

### UNIVERSITY OF CENTRAL FLORIDA

**Masters of Science** Modeling and Simulation          May 2019
- Focus | Intelligent Systems, Machine Learning, and Data Science
- Overall GPA | 3.6

**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
- 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