Juan Huerta

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Education

2020-2022 M.S in Computer Science - **The University of Texas at Austin**

Selected courses -

Machine Learning - Deep Learning – Online Learning & Optimization – Reinforcement Learning

2016-2018 B.S in Applied Mathematics - **Columbia University in the city of New York**

Senior Research: - Generating Music by Continuous Neural Network Predictions of Binary Arrays

Selected courses -

Evolutionary algorithms - Statistical Inference - Quantum Mechanics - Advanced Topics in Music

2013-2016 B.S in Physics, Music (Double Major) - **St. Lawrence University**

Sigma Pi Sigma Honor Society - Pi Mu Epsilon Honor Society - Quantitative Club

Employment History

July 2019 - Present **GE Appliances, a Haier Company,** GE Appliance Park, Louisville, KY, 40229, United States
Artificial Intelligence Engineer

Part of the Emerging Technologies and Innovation Group, focused on researching and implementing artificial intelligence technologies to be used in product areas including refrigeration, washer systems, cooking products, service, and small appliances.
Other responsibilities include discovering and patenting novel ML systems; developing and validating ML models; leverage cloud-based architectures and technologies to deliver optimized ML models at-scale; construct optimized data pipelines to feed ML models; continuous integration and continuous deployment best practices, including automation and monitoring, to ensure successful deployment of ML models and application code

Mar 2019 - July 2019 **Modis,** Otis St, CA 94025, United States
Contractor - Software Engineer / Machine Learning

Design and build hardware, software and networking technologies for appliance prototypes relating to machine learning systems, mobile applications, and IoT solutions.

Technologies: Tensorflow, OpenCV, Skit-learn, Android Dev, Rest API, C, AWS

Aug 2018 - Dec 2018 **Applied Underwriters,** San Ramon,CA, 905542, United States
Technical Analyst

Responsible for analyzing, designing, building, maintaining and continuously improving the company's core applications and databases. Also perform complex data migration, data interchange, reporting and analysis. In addition, set and maintain database standards, and performance tuning of database systems.

Mar 2019 - July 2019 **St.Lawrence U, Physics Dept,** 23 Romoda Dr, Canton, NY 13002, United States
Teaching Assistant

In charge of leading weekly physics problem sessions available to introductory physics students. Responded to homework questions and reviewed the classroom material.

Research Experience

Sep 2017 - May 2018 **Generating Music by Continuous Neural Network Predictions of Binary Piano Roll Arrays**
Columbia University, Creative Machine Labs

Senior research Project (2 semesters) supervised by Professor Hod Lipson part of the Creative Machines Lab. This project uses existing piano MIDI to train a Neural Network similar to The Continuous Bag of Words Model combined with a predictive scheme to generate new music, or complete an unfinished piece.

Jul 2017 - Sep 2017 **Automated Composition of Popular Music (ACPM)**
Carnegie Mellon University (remote)

Collaborated with Professor Roger Dannenberg. The project uses a collection of algorithms derived from music theory analysis and probability to alter music while maintaining similar musical structure.

June 2017 - Aug 2017 **REU: Angle Control and Electronic Transport Properties of Twisted Bilayer Graphene**
Columbia Univeristy, MRS

Project supervised by Professor Cory Dean as part of the Material Research Science and Engineering Center. Contributed to the development of a technique to precisely control the relative angle of two single layer graphene stacked on h-BN.

Publications

- **Shift-Invariant Dictionary Learning using Temporal CONV-WTA Autoencoders for Discovering Music Relations**
  2nd Workshop on Natural Language Processing for Music and Spoken Audio, ISMIR 2021 (Online), July, 21, 2021
  Under Review

Patents

- **502119US01 – AutoWash/Dry (Automatically Selecting Optimum Cycle for a Given Load)**
  23 Jan 2020
  Patent Granted
- **502155US01 – Artificial Intelligence (AI) Sound Wash**
  3 Mar 2020
  Patent Pending
- **502119US01 – Artificial Intelligence (AI) Sound Dry**
  16 Oct 2020
  Patent Pending
- **502838US01 – Artificial Intelligence Closet Recommendation System for Clothes Folding Machine**
  16 Mar 2021
  Patent Pending

- **502830US01 – Automatic Tea Dispensers for Personalized Tea Based on Body Vitals Signs**

  17 Mar 2021
  Patent Pending

- **502840US01 – A method for Automatic Folding of Laundry Garments Using Artificial Intelligence**

  16 Mar 2021
  Patent Pending