Juan Huerta

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Education

2020-2022 M.S in Computer Science - **The University of Texas at Austin -** GPA: 3.58

Thesis: - Undecided

Selected courses -

Machine Learning - Deep Learning

2016-2018 B.S in Applied Mathematics - **Columbia University in the city of New York -** GPA: 3.28

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

Selected courses -

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

2016-2018 B.S in Physics, Music (Double Major) - **St. Lawrence University -** GPA: 3.73

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

Responsible for researching and implementing artificial intelligence technologies to be used in product areas including refrigeration,washer systems, cooking products, service, and small appliance:

- Lead AI Engineer developing Application for kitchen hub (andorid 8.1) to detect food ingrdients in kitchen counter at *CES2020*
- Lead AI Engineer in incorporating camera in washer/camera fabric detection product cafe brand model3131321

Other projects include: refrigeration camera module, kitchen hub food recognition, anomaly detection for servicing appliances

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

Developed quick prototypes as requested by the product lines at GE Appliances. Implemented a variety of machine learning projects involving embedded systems, small appliances, mobile applications, and IoT solutions.

Technologies: Tensorflow, OpenCV, Skit-learn, Android Dev, Microsoft IoT Board, 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

- **Technologies:** Microsoft SQL, FoxPros, Plastic, OpenCV, Skit-learn, Android Dev, Microsoft IoT Board, Rest API, C, AWS

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

Oct 2009 - Sep 2010 **Generating Music by Continuous Neural Network Predictions of Binary Piano Roll Arrays**
Columbia University, Creative Machine Labs

Project 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.

Published: AMCN IS123214

Oct 2009 - Sep 2010 **Automated Composition of Popular Music (ACPM)**
Carnegie Mellon University

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.

Oct 2009 - Sep 2010 **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**
  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.
- **Shift-Invariant Dictionary Learning using Temporal CONV-WTA Autoencoders for Discovering Music Relations**
  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.

Patents

- **502119US01 – AutoWash/Dry (Automatically selecting optimum cycle for a given load)**

  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.
  Patent Granted

- **502155US01 – Artificial Intelligence (AI) Sound Wash**

  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.
  Patent Pending

- **502119US01 – Artificial Intelligence (AI) Sound Dry**

  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.
  Patent Pending

- **502838US01 – Artificial Intelligence closet recommendation system for clothes folding machine**

  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.
  Patent Pending

- **502830US01 – Automatic tea dispensers for personalized tea based on body vitals signs**

  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.
  Patent Pending

- **502840US01 – A method for automatic folding of laundry garments using artificial intelligence**

  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.
  Patent Pending

- **503272US01 – Offloading model inference from home appliance to nearby mobile device or cluster of devices**

  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.
  Patent Pending

- **502948US01 – User embeddings of appliance usage data to analyze and predict appliance failure and user behavior**

  Proceedings of the 27th ACM Symposium on Operating Systems Principles, Ontario, Canada, Oct 2019. SOSP 2019.
  Patent Pending