Juan Huerta

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Education

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

Research focus: - VaryNote: A Method to Automatically Vary the Number of Notes in Music

Selected courses:

Advanced OS - Deep Learning - Virtualization - Reinforcement learning - NLP

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

Aug 2022 - Present **The Walt Disney Company,** Disney Experiences, Grand Central Creative Campus, CA 91201
Senior Software Engineer, Machine Learning - Emerging Technology

Research emerging ML techniques and drive the development of innovative solutions, advancing Disney's experiences, products, and services. Collaborate cross-functionally to identify opportunities for integrating machine learning into interactive experiences, content personalization, and audience engagement. Proficiently work with ML libraries and frameworks for both cloud and edge computing. Specialize in MLOps architecture design, generative AI, and audio-visual analysis for theme park applications.

July 2019 - Dec 2021 **GE Appliances, a Haier Company,** GE Appliance Park, Louisville, KY, 40229
Artificial Intelligence Engineer - Emerging Technology and Innovation

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
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. Other responsibilities included translating design thinking into functional technologies; collaborating daily with product managers, product designers, and user researchers in order to understand business goals.

Aug 2018 - Dec 2018 **Applied Underwriters,** San Ramon,CA, 905542
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.

Publications

Sep 2021 - Aug 2023 **VaryNote: A Method to Automatically Vary the Number of Notes in Symbolic Music**
Juan Huerta, Bo Liu, Dr. Peter Stone – Univeristy of Texas at Austin, LARG
Proc. of the 16th International Symposium on CMMR. (Oral presentation)

Jan 2022 - Aug 2023 **A Multispectral-Sensing System with Automated Machine Learning for Multiplex Detection**
Juan Huerta, Dr. Munir Pirbhai
IEEE Sensor Journal, 2023.
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Patents

- **US20210230783A1 – AutoWash/Dry (Automatically Selecting Optimum Cycle for a Given Load)**
  Khalid Jamal Mashal, Juan Manuel Huerta

  Filed Date: 23 Jan 2020
  https://patents.google.com/patent/US20210230783A1
- **US11692301B2 – Artificial Intelligence (AI) Sound Dry**
  Khalid Jamal Mashal, Nemetalla Salameh, Juan Manuel Huerta

  Filed Date: 3 Mar 2020
  https://patents.google.com/patent/US11692301B2
- **WO2021175336A1 – Artificial Intelligence (AI) Sound Wash**
  Khalid Jamal Mashal, David Scott Dunn, Juan Manuel Huerta

  Filed Date: 16 Oct 2020
  https://patents.google.com/patent/WO2021175336A1
- **US20220296033A1 – Automatic Tea Dispensers for Personalized Tea Based on Body Vitals Signs**
  Abdel Hamad, Hashim, Siddiqui, Juan Huerta, Nabil Alhaffar

  Filed Date: 17 Mar 2021
  https://patents.google.com/patent/US20220296033A1
- **US20220298722A1 – Automatic Folding of Laundry Garments Using Artificial Intelligence**
  Nasib AlHaffar, Abdel Hamad, Juan Manuel Huerta

  Filed Date: 16 Mar 2021
  https://patents.google.com/patent/US20220298722A1
- **US20220298721A1 – Closet Recommendation System for Clothes Folding Machine**
  Nasib AlHaffar, Abdel Hamad, Juan Manuel Huerta

  Filed Date: 16 Mar 2021
  https://patents.google.com/patent/US20220298721A1

- **US20230109252A1 – Appliance Data to Predict Failure and User Behavior**
  Khalid Jamal Mashal, David Scott Dunn, Juan Manuel Huerta

  Filed Date: 01 Oct 2021
  https://patents.google.com/patent/US20230109252A1

- **US20230228427A1 – Automatic Stove-top Control Knob using Artificial Intelligence**
  Juan Manuel Huerta, Srikanth Raavi-Venkata, Abdel Hamad, James Lee Armstrong, Steven Michael

  Filed Date: 01 Oct 2021
  https://patents.google.com/patent/US20230228427A1

- **US20230122787A1 – Offloading Model Inference from Home Appliance to Nearby Mobile Device**
  Juan Manuel Huerta, Abdel Hamad, Jeremy Miller

  Filed Date: 16 Oct 2021
  https://patents.google.com/patent/US20230122787A1

Other Research Experiences

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

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.

June 2017 - Aug 2017 **REU: Angle Control and Electronic Transport Properties of Twisted Bilayer Graphene**
Columbia Univeristy, Condensed Matter Physics, Dean Lab

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.