Sophia Sun

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EDUCATION

University of California San Diego, San Diego, CA — Ph.D.   2018 - present
Artificial Intelligence Group, Computer Science and Engineering
Advisor: Sicun Gao

Wellesley College, Wellesley, MA — B.A.   June 2018
Double Major in Mathematics and Computer Science.

Massachusetts Institute of Technology, Cambridge, MA — *Cross Registration*   2016 – 2018
Coursework: 6.006 Introduction to Algorithms, 6.034 Artificial Intelligence, 21M.380 Music and Technology,
6.S094 Deep Learning for Self-Driving Cars (winter session), 6.867 Machine Learning (graduate level)

RESEARCH EXPERIENCE

Graduate Student Researcher, UC San Diego AI Lab   San Diego, CA   2018.9 – present
  PI: Prof. Sicun Gao
  * Design and analysis of sample-efficient and provably-reliable reinforcement learning algorithms.

Research Assistant, Johns Hopkins University   Baltimore, MD   2017.6 – 2018.6
  PI: Prof. Suchi Saria; NSF Research Experience for Undergraduate program
  * Poster: *Predicting in-Hospital Cardiac Deterioration from Heterogeneous Medical Time-Serie*s.
  * Data pipelining and machine learning for of multi-modal and multi-resolution medical time-series data.

Research Assistant, music21 (MIT) http://web.mit.edu/music21/   Cambridge, MA   2016.10 – 2018.2
  PI: Prof. Michael Cuthbert
  * Investigated the expression of sentiments in songs based on lyrics, melodic, harmonic, and other musical data
    extracted from sheet music through computational methods. (Paper in Empirical Musicology Review)

INDUSTRY INTERNSHIP / PROJECTS

Research Scientist Intern, Amazon Robotics RAD   2020.6 – 2020.9
  (reinforcement learning, optimization)
  * Machine learning for multi-robot planning in amazon's fulfillment centers.

Amazon Alexa Prize Challenge, team UC San Diego   2019.9 – 2020.5
  (reinforcement learning, natural language processing)
  * Principal member of one of the 10 final participating teams. Incorporation of RL in to conversational AI.

Software Engineer Intern, Google DeepMind   London, U.K.   2018.6 – 2018.9
  (Golang, backend engineering)
  * Secure Electronic Health Records data pipelining, analysis, and verification.
  * Improved interpretability and verifiability of analytical algorithms deployed in Deepmind's Streams App.

Data Science Intern, Musical.ly (now TikTok)   Shanghai, China   2016.6 – 2016.8
  (Java, Hadoop on Spark, SQL, JavaScript/JQuery)
    * Social media data analytics and monitoring pipelines using Hadoop on Spark and AWS's Elastic MapReduce.

PUBLICATIONS

Sophia Sun, Sofy Yudistkaya, Derek Kwan. "Karaoke of Dreams: A multi-modal neural-network generated music experience." *Proceedings of the Joint Conference on AI Music Creativity (CIMC+MUME 2020),* 2020
Sophia Sun, Michael Scott Cuthbert. "Emotion painting: lyric, affect, and musical relationships in a large lead-sheet corpus." *Empirical Musicology Review 12.3-4*. 2018

Talks & Workshops

Reinforcement Learning 101   online   2020
Workshops for artists at Arts Counsel Korea (ARKO)
Natural Language Processing for Creatives   Bombay Beach, CA   2020
Workshop at Brahman.ai art residency

Teaching

Tutor, CS231 Algorithms, Wellesley College   2017, 2018
Tutor, CS230 Data Structures, Wellesley College   2016

Leadership

Graduate Women in Computing (GradWIC), UC San Diego   Vice President, 2019 – present
The Center for Ethics in Science & Technology, UC San Diego   Board Member, 2018 – 2020
Slater International Center, Wellesley College   Student Mentor, 2015 – 2018

Scholarships & Honors

Sigma Xi Honors Research Society, Wellesley College   2018
Research Experience for Undergraduates at Johns Hopkins University, National Science Foundation   2017
O'Hanlon Conference Scholarship (Grace Hopper), Wellesley College   2017