Chuang, Yun-Shiuan (Sean)

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EDUCATION

University of Wisconsin – Madison *09/2019-present*
- Ph.D. in Psychology & Additional M.S. in Computer Science (in application process); GPA: 4.0/4.0
- Selected Courses: Artificial Intelligence, Machine Learning, Deep Learning, Data Structures and Algorithms

University of Wisconsin – Madison *09/2017-06/2018*
- *Visiting Student Researcher*; GPA: 4.0/4.0; Fully-funded by Study Abroad Scholarship for Future Scholars

National Taiwan University - Ranked 1st in Taiwan *09/2013-06/2018*
- Bachelor of Science in Psychology*;* GPA: 4.2/4.3 (Rank: 2/63)
- Dean's Award of College of Science; Presidential Awards (7 out of 8 semesters)
- Selected Courses: Data Science, Statistical Analysis, Psychology Experiment Design, Multivariate Analysis

MACHINE LEARNING RELATED PUBLICATIONS

[1] **Chuang, Y.S.**, Zhou, X., Ma, M., Ho, M. Austerweil, J., Zhu, X. (under review) *Using Machine Teaching to Investigate Human Assumptions when Teaching Reinforcement Learners*

[2] **Chuang, Y.S.**, Hubbard, E., Austerweil, J. (2020) *The "Fraction Sense" Emerges from a Deep Convolutional Neural Network.* Proceedings of the 42nd Annual Meeting of the Cognitive Science Society

[3] **Chuang, Y.S.**, Hung, H.Y., Gamborino E., Goh, O.S., Huang, T.R., Chang, Y.L., Yeh, S.L., Fu,L.C. (2020) *Using Machine Theory of Mind to Learn Agent Social Network Structures from Observed Interactive Behaviors with Targets.* **IEEE,** Robot and Human Interactive Communication

PROFESSIONAL EXPERIENCES

Graduate Researcher, Computational Cognitive Science Lab, UW-Madison *09/2019-present*
- Applied **deep reinforcement learning** (**DRL**) to reverse-engineer human assumptions when teaching reinforcement learners **(Python)** and found that human is most capable of teaching Q learner with small discount factor [1]
- Designed and built the online teaching game as a full-stack web developer **(HTML, CSS, JavaScript, SQL)** for the RL project and collected 1030 players' data on MTurk
- Discovered that "number sense" emerged from a **deep convolutional neural network** (**VGG16**) trained for classifying natural images **(Python, TensorFlow, MATLAB, R)** and published the result [2]

Research Associate*,* Center for Artificial Intelligence and Advanced Robotics, NTU *12/2018-08/2019*
- Developed a robotic social cognition module by training a **deep neural network** (**resnet & LSTM**) that infers people's social preferences **(Python, TensorFlow, R)** with 80+% accuracy in an online social interaction game I established as a full-stack web developer **(HTML, CSS, JavaScript, SQL)** [3]

Visiting Researcher*,* Waisman Center, UW-Madison *08/2017-06/2018*
- Automated the end-to-end human fMRI data processing and analysis pipeline which slashed 200+ hours of manual work of the lab for each semester **(Shell, MATLAB)**

DATA SCIENCE PROJECT LEADERSHIP

Co-Founder, PyData Madison *12/2019-present*
- Organized data science relevant events for the PyData community at Madison, WI

Project Leader in the NTU CS+X Hackathon *09/2016-01/2017*

Awarded the 1st place for best overall quality among 30+ competing projects
- Identified the political "filter bubbles" that existed in the Facebook user community using k-means clustering **(R)** on web-crawled **(JavaScript)** large-scale post-liking data

SKILLS & LANGUAGES

- Python (TensorFlow, Scikit-learn), R, MATLAB, SQL, Java, Shell, Git, JavaScript, HTML, CSS, LaTeX
- **Author of the R package label4MRI -** a toolbox for labeling brain image (27 stars and 13 forks on GitHub)