# Shao-An (Sean) Yin

yin00425@umn.edu | 206-480-9199 | Greater Minnesota Area
LinkedIn://shao-an-yin | Github:// drrdrem

## EDUCATION

**University of Minnesota**, Twin City, MN                                                                        Jun. 2025
- *Doctor of Philosophy* in Electrical and Computer Engineering, focus on *Distributed Optimization and Algorithms*

**University of Washington**, Seattle, WA                                                                        Jun. 2019
- *Master of Science* in Mechanical Engineering, focus on *Applied Optimization, Data Science, and Algorithms*

**National Taiwan University**, Taipei, Taiwan                                                                    Jun. 2016
- *Bachelor of Science* in Mechanical Engineering, focus on *Automatic Control and Robotics*

## WORKING EXPERIENCES

**UMN Dr. Nicola Elia's Group** | Research Assistant                                          Sep. 2021 – Present
- Multi-Agent Robotics Systems and Distributed Optimization Algorithms.

**Amazon.com Inc.** | Applied Scientist Intern, San Diego                                   May. 2022 – Aug. 2022
- Developed Reinforcement Learning Based Active Learning Algorithms for smart sequential batch unlabeled data selection to human annotators.

**Taiwan Semiconductor Manufacturing Company (TSMC)** | Engineer, Taiwan          Oct. 2020 – Jul. 2021
- Built Image-based Unsupervised Anomaly Detection models to facilitate manufacturing processes based on cross-factory historical fabrication measurement information.

**UW Dr. Sheng Wang's Lab** | Summer Research Intern, Seattle                            Jul. 2020 – Sep. 2020
- Developed Reinforcement Learning Agents for smart references selection in a sequential manner to help humans' construction of knowledge (submitted to AAAI 2021).

**UW BioRobotics Lab** | Research Assistant, Seattle                                         Jan. 2019 – Jun. 2020
- Developed Augmented behavior trees embedded Graphical Models with the execution success/failure probabilities in the context of medical procedure tracking based on clinical healthcare medical records.
- Worked with UW Medicine to provide statistical analysis of clinical healthcare data.
- Built a clinical data pre-processing pipeline in Python and implemented Recurrent Neural Network (RNN) sequence embedding in PyTorch.

**Allen Institute for Brain Science** | Research Intern, Seattle                              Jun. 2018 – Aug. 2018
- Designed a controller of the neuron's dynamical model optimized by the genetic algorithm with 91% accuracy to control the excitability of neurons in hippocampus in the context of seizure control.
- Analyzed neurons' morphological data and electrophysiological data based on various machine learning techniques.
- Conducted statistical testing on large data sets resulting from biophysical simulations.

**Dragoncloud.ai** | Part Time, Remote                                                            Apr. 2020 – Aug. 2020
- Developed a Computer Assisted Language Learning (CALL) system to help non-native speakers improve their foreign language pronunciation.
- Built a speech and phonemes sequence to sequence forced alignment with Connectionist Temporal Classification (CTC)-LSTM decoding in Pytorch.

**Tiny Machine and Mechanics Laboratory** | Research Assistant, Taiwan                   Sep. 2015 – Aug. 2016
- Developed an Electroencephalography (EEG) controlled Exoskeleton to help the disabled regain their mobility.
- Extracted physical control commands' features from people's brainwaves recordings through wiener filter and developed people's motion pattern recognition with short-time Fourier transform and wavelet analysis.

## SELECTED PROJECTS

**OpenAI Based control policy deep reinforcement learning** | Course Project              Sep. 2018 – Dec. 2018
- Developed a virtual agent to learn a continuous control policy from diverse environments in OpenAI GYM environment.
- Implemented Advantage Actor Critic (A2C) algorithm and Trust Region Policy Optimization (TRPO) algorithm.

## SKILLS

- **Algorithms**: Reinforcement Learning, Statistics, Optimization, Markov Decision Processes
- **PROGRAMMING**: Python • C++ • C • MATLAB • SQL