

Min-Hsiu Hsu

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OBJECTIVE	Looking for Full-time positions in Data Science & Machine Learning .	
SKILLS	Python (pandas, SciPy, scikit-learn, OpenCV, PyTorch, TensorFlow, Keras, Plotly), SQL, NoSQL (MongoDB, Neo4j), Web Development (Flask, HTML), AWS(RDS, EC2), GCP, CLI, MATLAB, C/C++	
COURSES	Machine Learning, Deep Learning, Data Science & Analytics, Bayesian Analysis & Computation, Database System, Convex Optimization, Statistical Process Control (SPC), Manufacturing Data & Quality Systems	
EDUCATION	University of Illinois at Urbana-Champaign (UIUC) , IL, U.S.A.	Aug 2019 - present
	M.S. in Mechanical Engineering	
	<ul style="list-style-type: none">• Current GPA: 3.94/4.0• Research Fields: Smart Manufacturing, Machine Learning, Data Science, Predictive analytics	
	National Taiwan University (NTU) , Taipei, Taiwan	Sep 2014 – Jun 2018
EXPERIENCE	B.S. in Mechanical Engineering	
	<ul style="list-style-type: none">• GPA: 4.14/4.30, Rank 5/145 (Top 3%)• Honors/Awards: 5 times <i>Presidential Award</i> (Dean's list)	
	Machine Learning Engineer Intern, Quantrend Technology	Sep 2020 – Dec 2020
	<ul style="list-style-type: none">• Project: <i>Deep Reinforcement Learning for Financial Trading</i>• Goal: Develop RL agents to produce trading strategies and validate its profitability in real market• Methodology: Proximal Policy Optimization (PPO), GRU, Time series sampling and modeling• Impact: Developed company's modular Reinforcement Learning codebase with pluggable deep neural network models, learning environments based on OpenAI Gym and StableBaselines. Built machine-learning (ML) based quantitative trading strategies and training pipeline to automate and speed up hyperparameter tuning and model selection.	
	Data Science Intern at DS & ML Team, iRobot	May 2020 – Aug 2020
	<ul style="list-style-type: none">• Project: <i>Roomba Mission Successful Rate Prediction with Smart Map Scoring</i>• Goal: Investigate causality between Spatial Map Features and Roomba Mission Successful Rate• Methodology: Spatial feature engineering (GIS data), clustering, regression, classification• Impact: Developed map scoring system with AUC = 90% in binary classification to help root cause finding in robot failure, give insights in product improvement, and assist user personalized coaching.	
	Graduate Research Assistant at Automation & Digital Mfg Lab, UIUC	Oct 2019 – present
	<ul style="list-style-type: none">• Project: <i>Sensor Fusion for Remaining Useful Life Estimation in Material Fatigue</i>• Goal: Predict Remaining Useful Life (RUL) of recycled metal with Non-Destructive Testing method• Methodology: Feature engineering (PCA, FFT, wavelet transform) in multi-sensor signals (infrared camera, ultrasound, acoustic emission), SVM, CNN+LSTM, sensor fusion/selection• Impact: Systematized data storage and retrieval by deploying web app with MySQL database and predict remaining useful life of recycled materials with machine learning approaches. (demo)	
	Full-time Research Assistant at Biomedical Computed Imaging Lab, NTU	Mar 2019 – Jul 2019
	<ul style="list-style-type: none">• Project: <i>AI in Medical Image</i>• Goal: Develop AI system to detect abnormal structure in medical image and evaluate image quality• Applied deep learning CNN models (YOLOv3, Faster-RCNN, RetinaNet) for detecting polyps in colonoscopy image. RetinaNet achieved 93% precision and 93% recall rate• Built SVM classifier for classifying blurred and clear colonoscopy image with 98% F1 score	
COURSE PROJECTS	Data Science & Analytics , Computer Science, UIUC	Spring 2020
	<ul style="list-style-type: none">• Reliability analysis with Naive Bayes, hypothesis testing, probabilistic and statistical modeling• Clustering groups with PCA, GMM; Bayesian Network to evaluate quality of stool sample• Time series modeling to build sequenced-aware recommendation system (HMM, LSTM)	
	Manufacturing Data & Quality System , Mechanical Science and Engineering, UIUC	Fall 2019
	Course project: <i>Non-destructive Inspection of Photovoltaic Silicon Wafers</i>	
	<ul style="list-style-type: none">• Achieved 90% F1 score in defect detection (object detection task) with image processing and CNN	