

CAROLYN (CHIH-HSUAN) KAO

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PROFESSIONAL SUMMARY

Driven to learn quickly, advance programming proficiency and training in Computational Mathematics. Solid background in Quantitative Research and Data Science settings supporting team needs. Motivated team player focused on boosting efficiency and performance with analytical and detail-oriented approaches.

Advanced proficiency in Python, Java, C++, R, MATLAB, Julia, HTML, UNIX and Linux Shell
Intermediate skills in TensorFlow, PyTorch, SQL, SAS, Excel VBA and Stata
Earned Chartered Financial Analyst (CFA) Level I

EDUCATION

STANFORD UNIVERSITY

Stanford, CA

M.S. Computational and Mathematical Engineering; CGPA 3.932/4.3

Sep 2019 – Jun 2021

- Coursework in Deep Learning (DL), Natural Language Processing (NLP), Reinforcement Learning, Time Series Analysis, Algorithmic Trading, Software Development, Numerical Analysis, Optimization, Stochastic Control Process, Distributed Computing, Mathematical Finance, Differential Equations.

UNIVERSITY OF CALIFORNIA SAN DIEGO

La Jolla, CA

Graduated magna cum laude with CGPA 3.878; Awarded Honors with Distinction in Management Science; Member of Phi Beta Kappa; Participated in the National Name Exchange in 2018-19

B.S. Applied Mathematics; GPA 3.91/4.0

Sep 2015 – Jun 2019

- Coursework in NLP, Java OOP, Data Structures, Applied Computing, Probability Theory, Mathematical Statistics, Real Analysis, Optimization, Multivariable and Vector Calculus, Actuarial Mathematics.

B.S. Management Science (Quantitative Economics); GPA 3.87/4.0

Sep 2015 – Jun 2019

- Coursework in Operations Research, Micro/Macroeconomics, Corporate Finance, Financial Markets, Industrial Organization, Accounting, Econometrics, Decisions Under Uncertainty, Financial Mathematics.

WORK EXPERIENCE

LINKEDIN@CHKA0831

Stanford University

Stanford, CA

Teaching Assistant in CME 211: Software Development for Scientists and Engineers Sep 2020 – Dec 2020

- Assisted in lectures, held office hours and graded exams & assignments for 20 hours/week (50% CASHip).

Taiwan Semiconductor Manufacturing Company Limited (TSMC)

Hsinchu, Taiwan

Etch AI/ML Intern at Frontend Module Pathfinding

Jun 2020 – Sep 2020

- Engaged in Etch ML team to optimize SiGe loading effect and accelerate Pilot Run using Active Learning and Transfer Learning, leading to a wafer saving of over 90% in comparison to the manual tuning and further developing a solid foundation for future recipe tuning across patterns.
- Initiated proposals for Idea Forum and filed Trade Secrets particularly in regard to the deployment of Model-Agnostic Meta Learning in Cross Process Layer Recipe Tuning.
- 2nd Place, TSMC Research & Development Internship Final Competition, 2020.
- 3rd Place, TSMC Machine Learning Competition, 2020.

RESEARCH PROJECTS

CHKA0831.GITHUB.IO/PORTFOLIO

Automated Parameter Tuning for Land Ice Simulations *Sandia Nat'l Labs (Jun 2021 at Stanford, CA)*

Mentored by Jerry Watkins, Ph.D. and Irina Tezaur, Ph.D. from Sandia, individually working on developing a framework to automate the parameter tuning process of the MPAS-Albany Land Ice (MALI) Model on HPC.

Using RCNN to Predict S&P 500 Movements [NLP; PyTorch] *Stanford Univ. (Mar 2021 at Stanford, CA)*

Constructed RCNN models with various attention mechanisms given a hybrid inputs of both news title and DJIA market indices to estimate the short-time market directional movements in an efficient manner.

Artistic Style Generator w/ CycleGAN & VGG19 [TensorFlow] *Stanford Univ. (Dec 2020 at Stanford, CA)*

Implemented two artistic style generating architectures to map from the Vincent Van Gogh dataset to real landscape photos in the respect of artistic style and content, generating corresponding stylized image outputs.

Classifying Types of Toxicity in Wikipedia Comments [NLP; TensorFlow] *UCSD (Dec 2018 at La Jolla, CA)*

Developed a series of Deep Learning models (LSTM; Bidirectional RNN with LSTM; CNN, etc.) to predict if some Wikipedia comments contain specific forms of toxicity using supervised learning.