Samantha Shih

Phone:(886)988-353-045
Email:sammyshih888@gmail.com
Website: samanthashih.com
Github: github.com/sammyshih888
FB: samantha.shih.3745
IG: @sammyleafstar

EDUCATION

Morrison Academy Taichung, Taiwan High School 8/2020 - Present
GPA: 4.14/4.14 Weighted
4.0/4.0 Unweighted

COURSES TAKEN

Data Structures and Algorithms-by University of California: Berkeley **2.0 Semester Units**

Learned about different data structures and algorithms; applied concepts to solve problems in efficient ways

Machine Learning Using Python-by University of California: Los Angeles **4.0 Quarter Units**

Learned about supervised and unsupervised learning models and model optimization; applied models to various datasets

CAREER PREPARATION

Linear Algebra for Machine Learning and Data Science - by DeepLearning.AI via Coursera (G12)
Meta Android Developer Professional Certificate - by Meta via Coursera (G12 summer)
Introduction to TensorFlow for Artificial Intelligence, Machine Learning, and Deep Learning - by DeepLearning.AI via Coursera (G11)
Introduction to Medical Software - by Yale University via Coursera (G11)
Meta iOS Developer Professional Certificate - by Meta via Coursera (G10 summer)
HTML, CSS, and Javascript for Web Developers - by Johns Hopkins University via Coursera (G10)
Introduction to Python Programming - by University of Pennsylvania via Coursera (G9)
Machine Learning for All - by University of London via Coursera (G9)
SQL for Data Science - by University of California at Davis via Coursera (G9)

COMPUTER SKILLS

Languages: Java, Python, c++, JavaScript, c
Web development: HTML, CSS, JavaScript, Node.js,
Database management: SQL, MySQL
Data analysis and visualization: pandas, NumPy, Matplotlib
Mobile Development: Java, Swift (Android & iOS)
Machine Learning & AI: NLP, neural network architectures (CNNs, RNNs, GANs), TensorFlow, PyTorch, medical image analysis

EXTRACURRICULAR ACTIVITIES

Initiator, "EMTouch," Emotion Identification Training App, self initiated project
G11-12
Developed an app training users to identify emotions of common facial expressions; goal is to facilitate communication between autistic and neurotypical individuals; collaborated with autistic individuals (anonymous) and Physical Medicine and Rehabilitation Physician Junhua Zhou for app improvements

First author and presenter, "The Classification of Beau's lines, Terry's nails, and Clubbing through AlexNet with Attention," 2022 International Conference on Fuzzy Theory and Its Applications
G11
Wrote, edited, published, and presented conference paper on nail disease classification using a machine learning model AlexNet with attention mechanisms; led and collaborated with team members to overcome problems

First co-author, International Society for Quality in Health Care International Conference 2023
G11-12
Design and conduct survey, publish "Determining Facilitators and Barriers to Online Treatment Usage for Taiwanese People With and Without Experience"; published in ISQua Conference

Coauthor, "3D VOSNet: Segmentation of endoscopic images of the larynx with subsequent generation of indicators," Published in Heliyon Journal
G11
Assisted with experimentations; contributed reagents, materials, analysis tools, and data; worked with team members to apply machine learning model 3D VOSNet in predicting larynx problems; published journal paper in Heliyon Journal (Q1, IF=3.776)

Third author and presenter, "HICAS: Hearing Impairment Communication Assistive System with the Extraction Search Network," 2023 12th International Conference on Awareness Science and Technology
G12
Helped develop a system that transforms speech to images called HICAS; wrote, edited, published, and presented conference paper about findings; collaborated with team members to modify and revise structure and methods of HICAS; overcame problems and raised accuracy

Initiator, "ConceptTracker," Keyword Analyzer Extension, self initiated "iQueryMiner" project
G11
Developed an extension that tracks google searches for a certain topic and uses clustering to determine repeated keywords; organizes information to sort links by keywords in a user dashboard

3rd Place, Astronomical Information Exchange App, 28th International ICT Innovative Services Awards, Education Open Data Division
G12
Developed a phone app that informers users to special astronomical phenomena and enables astronomers to share their data and findings through an online platform; worked with team members to design app and algorithm for recommendations
Also placed as Finalist at Taipei City Science and Technology Innovation Hackathon, Weather Open Data Division

Finalist, Safe Navigation App Project, Taipei City Science and Technology Innovation Hackathon, Transportation Open Data Division
G12
Designed an app with a map that takes in data of the frequency of accidents on certain roads or areas and gives routes to the user in order to avoid driving through these areas for a hackathon; collaborated with team members to develop app and algorithm

Finalist, "HI-Bike," Safe Bike Design, 19th National Electronic Design Creative Competition 2023
G11
App Developer and Hardware Assistant; added additional self-developed hardware equipment to a bike that warns users of dangerous biking habits and detects if the bike is in good shape to prevent accidents; warnings are sent through a phone app; worked with team members to develop bike

Initiator, Handwriting Classification Website
G10
Developed a website to collect user answers to ambiguous digits, creating a probability distribution to be used as training data for uncertain or fuzzy predictions to improve the accuracy of handwriting classification

Public Forum Debater, National Speech and Debate Association
G9-12
Drafted and delivered arguments and counterarguments for both Affirmative and Negative sides of a debate for a variety of topics; improvised new arguments and answers during debates; collaborated with a partner to give a coherent story

Original Orator, National Speech and Debate Association
G9-12
Wrote, memorized, and delivered original 10-minute-long speeches; covered topics like fear of Chinese invasion; won 2022 NSDA Taiwan original oratory

Treasurer, Executive Student Council, Morrison Academy Taichung
G11-12
Facilitate supportive learning environment with Spirit Weeks, Wellness Days, & celebration events; helped create & lead fundraisers; raised over USD $12250 in the Junior Carnival

Club President, Morrison Academy Rock Climbing Club
G9-12
Recruited and taught members to climb; planned and led trips to practice facilities and hiking trails; belayed for climbers; held seminars

Equestrian, Han Wang Equestrian Club
G9-12
Began at age 9; work with many horses; jump obstacles height 60-130cm; work in stables for free lessons; won national and international competitions

Basketball, Captain, JV/Varsity Basketball Team
G9-12
Worked with team members; learned to collaborate and promote team spirit; played in many tournaments; JV 9-11th; varsity in 12th grade

Classical Soprano
G9-12
Learned diaphragm-assisted singing; sang Italian songs and arias; won 2021 Asian Cup International Music Competition and Taiwan Nationals in Taichung; acted and sang "Cinderella" Musical at Morrison Academy as second female lead; acted and sang "Mamma Mia" as female lead

Photography
G9-12
Captured beauty in everyday life; learned to use different modes of camera to capture different types of photos; took photographs with themes such as "Motion and Stillness"

VOLUNTEERS & COMMUNITY SERVICES

Assistant Trainer, Therapeutic Riding Center at Han Wang Equestrian Club
G9-12
Assisted in equine therapy; taught basics of grooming horses; helped teach basics of riding and communication with horses to individuals with behavioral impairments

Volunteer Teacher, Youche Village Gospel Christian Church in Yunlin County
G10-12
Taught young Taiwanese children in elementary and middle school to code through a Minecraft Education Platform; taught basic English vocabulary and concepts; designed and led lessons; worked with other volunteers to plan lessons

Volunteer Teacher & Physical Therapist Assistant, Big Ball Earth Care and Humanist Association of Taiwan
G9-12
Volunteered to teach young Taiwanese children English; developed in patience and understanding; made friendships; better comprehend the English language and its similarities to Chinese; also volunteered to help guide visually impaired individuals in games that help with movement; went on hour long walks with individuals

Volunteer Teacher, Missions Trip to Jibei, Penghu
G11-12
Taught English language skills to disadvantaged children in outlying islands of Taiwan; fostered a supportive and interactive atmosphere; built close relationships with individual children outside of academic settings through sports or conversations

WORK EXPERIENCE

Research Assistant, Professor Chiun-Li Chin, Medical Informatics Healthcare Lab, Chung Shan Medical University
G10-12
Applied AI, TensorFlow, Keras, and a variety of different machine learning model architectures to classify different health problems including nail diseases or larynx problems; collaborated and discussed ideas with many college students; presented in conferences and hackathons; learned about and improved in the fields of machine learning and web/app development

Intern, Coding Minds, California Polytechnic State University
G12
Helped create system to help younger students learn to code(Python and Java); created hundreds of practice problems; drafted GPT prompts for hint generation; recorded tutorial videos for explanations

Web Development Intern, Anti-Allergy Limited Company
G9-10
Assisted in building a website; managed Google Ads and keywords; uploaded products to the Alibaba website to increase number of consumers; paid

AWARDS AND ACHIEVEMENTS

Pre-college Rank 66/247, Platinum Division, USA Computing Olympiad 2022 December (G11)

Winner, perfect score, Gold Division, USA Computing Olympiad 2021 December (G10)

Round 3 Participant, 2022 Facebook Meta Hacker Cup (G11)

Candidate, European Girls' Olympiad in Informatics 2023 (G11)

State Representative, Pacific Areas, 2021-2022 Voice of Democracy (G10)

Winner, Harvard Prize Book (G11)

2nd place, Public Forum Debate, 2021 National Speech and Debate Association(NSDA) Tournament in China (G9)

1st place, 2022 NSDA Taiwan National Qualifier Original Oratory (G11)

Outstanding Speaker, 2021 NSDA Tournament in China (G9)

Outstanding Speaker, 2021 NSDA Taiwan Members' Public Forum Debate (G10)

Semi-finalist, Public Forum Debate, 2020 NSDA Taiwan Members Invitational (G9)

Octofinalist, Public Forum Debate, 2022 NSDA Taiwan Members' Public Forum Debate (G11)

1st place, 2021 Asian Cup International Music Competition, Classical Soprano Division (G10)

2nd place, 5th Hong Kong Youth Cup International Music Contest, Classical Soprano Division (G10)

1st place, 2021 Taiwan Nationals in Taichung, Classical Soprano Division (G10)

1st place, 2023 Taiwan National Games in Tainan, Team Taichung (G12)

1st place, 130cm Fence Class, 2023 National Games in Tainan City, Professional Division (G12)

Finalist, 140cm Fence Class, 2023 National Games in Tainan City, Professional Division (G12)

1st place, 110cm Fence Class, 2023 Equestrian National High School Competition (G11)

1st place, 110cm Fence Class, 2022 Equestrian National High School Competition (G10)

Selected Participant, 2023 Potential National Athletes Talent Cultivation Program, Chinese Taipei Equestrian Association (G12)

Selected Participant, 2022 Potential National Athletes Talent Cultivation Program, Chinese Taipei Equestrian Association (G11)

3rd place, 120cm Fence Class, 2022 National Ranking Tournament for Equestrian (G11)

1st place, 100cm Fence Class, 2020 National Secondary School Equestrian Championship (G9)

3rd place, 100cm Fence Class, FEI Jumping World Challenge II 2021 (G9)

Academic High Honors With Distinction, Morrison Academy (G9-11)

Kathy Plymire Award, Morrison Academy (G11)

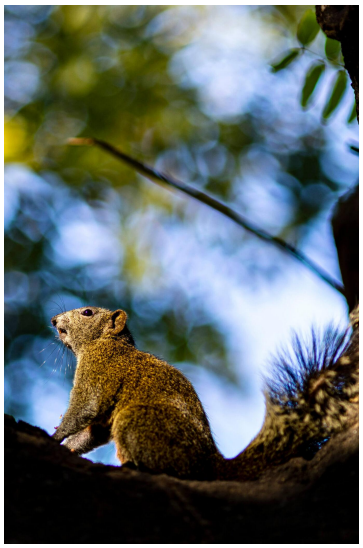
3rd place, Morrison Academy, 2020-2021 Voice of Democracy (G9)

AP Scholar with Distinction (G10-11)

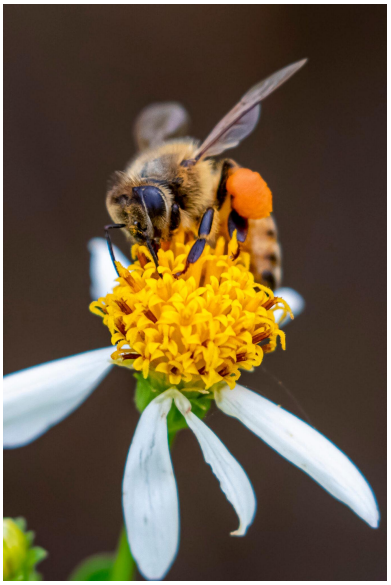
PHOTOGRAPHY PORTFOLIO

In this portfolio, I investigated the question "How can contrast between motion and stillness be explored and utilized to portray the world around us?" Because most things in the world can be broken down into moving and unmoving things, I set out to understand how each complements or clashes with the other. Following this question, I captured both moving objects of everyday life as blurred movements in contrast to a still background, and as still objects in contrast to a moving background. My portfolio depicts the contrast of motion for both man-made and natural objects.

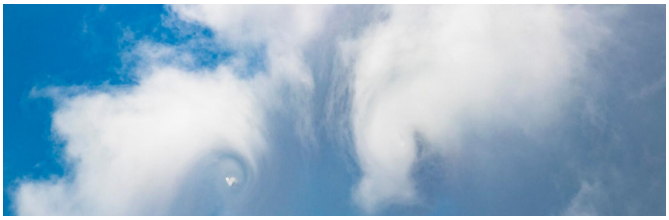
* = not part of this theme



**“Thinking” squirrel looking up, relationship of thought with space, looks up and ahead to future.*

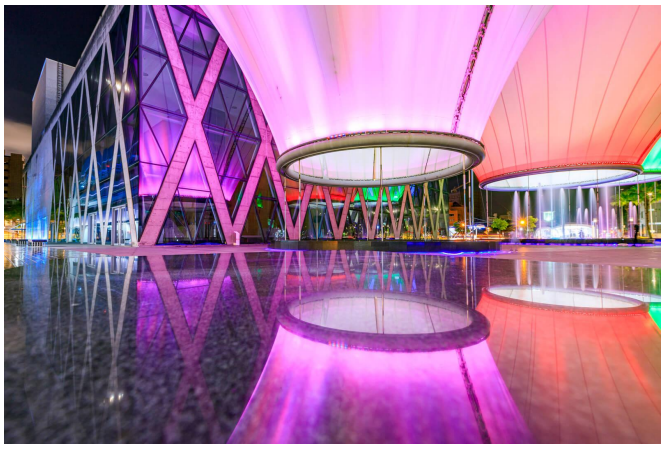


**Life vs death; pollination causes flower’s death but rebirth as seeds, bee clings to life source.*



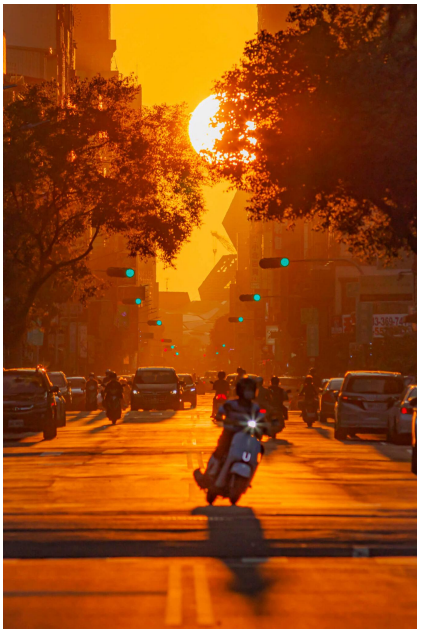
Man-made structure cuts through soft swirl of clouds, “shaping” or leaving behind its own path.

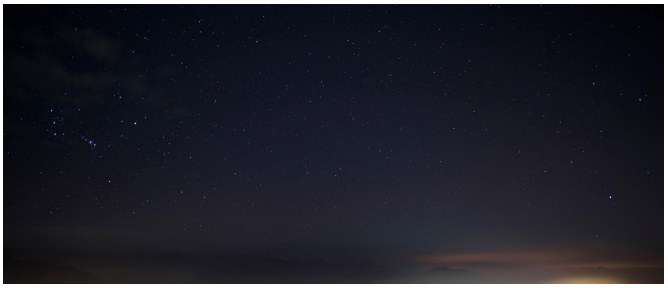
Solitude and solemn tone of night captured in contrast to gleaming bridge, bright vs dark idea.



Bidirectional; darker reflection for introspection, can be flipped to make reality blurred or clear.

I experimented with light and motion of the automobiles to capture the sunset between the buildings.





I used long exposure to capture the movement of clouds to form a contrast with the starry sky.

I used a longer shutter time to contrast the movement away from rails with a static character

A 10 second exposure blurred the moving vehicles into streaks of light, while still vehicles waited.

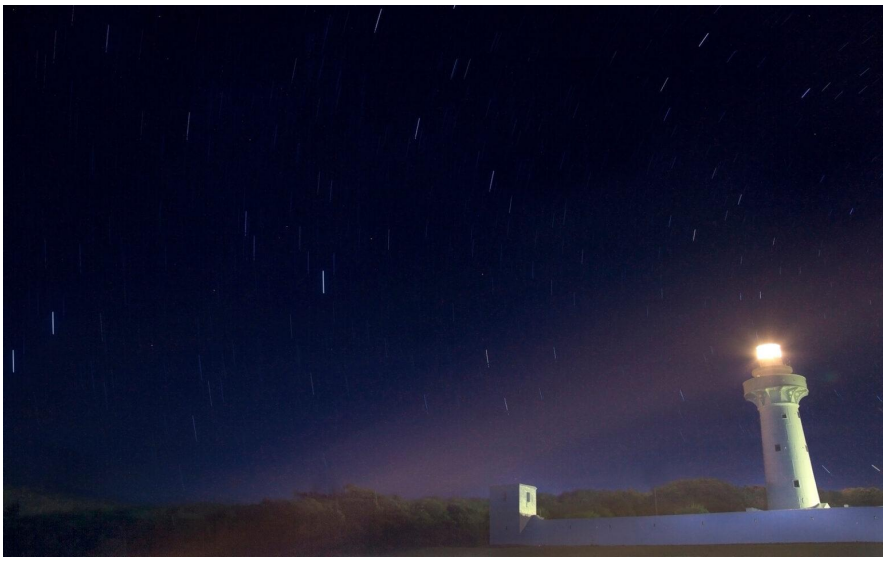
Long exposure made the boat in the back blurred while the decorative boat in the front is unmoving.

Long exposure shows the moving clouds while the ripples on the water surface were turned static.

Panning was used to capture the contrast between both movement and stillness and light and shadows.

I used a 30 second aperture value exposure to blur the moving ship and enlarge the light at the back.

Shutter time was extended to 35 seconds so that long exposure would capture the flowing star trails.



I lowered the shutter to let the rotating propellers form a circular halo.

Shutter time was extended to 6 seconds to capture both the railroad car and the static background.

I used a high speed shutter to capture the moving raindrops in contrast to the still plant.

I used the panning technique to capture the moving train in contrast to the blurred background.

A high speed shutter was used for the flying bird, then blurry orange hues were drawn on the wings.

I used a slow shutter to capture the graceful movement of the water contrasted against the rock.