

# UG Summer Research Internship 2023

## Project List

No.	Research Project Title	Dept	Name of Supervisor
1	Magnetic Resonance Imaging Reconstruction using Deep Learning	BME	CHANG Hing Chiu, Charles (BME)
2	Exploration of specific detection of Group A Streptococcus M3 strain	BME	HO Yi Ping, Megan (BME)
3	Comparing the generalization ability of different augmentation methods on the image-segmentation task	BME	YUAN Wu, Scott (BME)
4	Robust Fine-tuning of Large Language Models for Recommendations	CSE	CHENG James (CSE)
5	Graph workflow management and its applications	CSE	CHENG James (CSE)
6	Real-Time Uncertainty Estimation in Endoscopic Submucosal Dissection	CSE	DOU Qi (CSE)
7	Novel View Generation for NeRFs from Few-shot Views in Static Scenes	CSE	DOU Qi (CSE)
8	Understanding robustness and interpretation of deep learning models	CSE	FARNIA Farzan (CSE)
9	Improve 3D hand mesh reconstruction performance	CSE	FU Chi Wing, Philip (CSE)
10	Human body recognition in photos for LEGO construction	CSE	FU Chi Wing, Philip (CSE)
11	A Real-scanned Object Dataset for Robotic Research in Auto-warehouse Scenarios	CSE	FU Chi Wing, Philip (CSE)
12	Exploring 3D Textured Shape Generation	CSE	FU Chi Wing, Philip (CSE)
13	3D Hand Reconstruction in AR Application	CSE	FU Chi Wing, Philip (CSE)
14	Adversarial attack for Gender Recognition API (Group)	CSE	HO Tsung Yi (CSE)
15	Machine Learning in Microfluidic Biochips reliability Detection	CSE	HO Tsung Yi (CSE)

16	Image Processing with Neural Memory Ordinary Differential Equation (nmODE)	CSE	KING Irwin (CSE)
17	Leveraging Latent Space for Cell Morphology Synthesis from Gene Expression	CSE	LI Yu (CSE)
18	Predicting lncRNA-Disease Interaction using RNA-FM	CSE	LI Yu (CSE)
19	Virus Classification with Deep Learning for the Discovery of New Virus Types	CSE	LI Yu (CSE)
20	RNA Domains in Long Sequences with Secondary Structure and Contact Probability Matrix Approaches	CSE	LI Yu (CSE)
21	Prediction of RNA-ligand binding sites with deep learning	CSE	LI Yu (CSE)
22	Efficient Video Analytics	CSE	LO Chi Lik, Eric (CSE)
23	BiasPainter: Fairness Analysis of AI Image Generators	CSE	LYU Rung Tsong, Michael (CSE)
24	All language matter! A multilingual safety benchmark for large language models	CSE	LYU Rung Tsong, Michael (CSE)
25	Investigating Cultural Bias in Large Pre-trained Language Models	CSE	LYU Rung Tsong, Michael (CSE)
26	Political Tendency and the Possibility of Cultural Invasion in Different Languages of ChatGPT	CSE	LYU Rung Tsong, Michael (CSE)
27	Unveiling factual errors in LLMs	CSE	LYU Rung Tsong, Michael (CSE)
28	Automated Vulnerability Detection: the Combination of Directed Fuzzer and Symbolic Execution	CSE	MENG Wei (CSE)
29	Generating Coherent Animations through Fine Tuning Diffusion Model	CSE	WONG Tien Tsin (CSE)
30	Spatial-Temporal Old Video Restoration with Tri-planar Representation	CSE	WONG Tien Tsin (CSE)
31	Towards automated network configuration: Intent understanding via prompt engineering	CSE	XU Hong, Henry (CSE)
32	SmartNIC Performance Profiling and Prediction	CSE	XU Hong, Henry (CSE)

33	Accelerating Inference of Language Models	CSE	XU Hong, Henry (CSE)
34	Exploring Deep Learning for Accelerated Traffic Engineering	CSE	XU Hong, Henry (CSE)
35	Applications of Time Series Forecasting Algorithms	CSE	XU Qiang (CSE)
36	Static IR Drop Estimation Using Machine Learning	CSE	YOUNG Fung Yu, Evangeline (CSE)
37	Title: Combining Minimum Spanning Tree and Sparse Matrix Computation Algorithm for Token Merging	CSE	YU Bei (CSE)
38	Optical metasurface-based image compression and reconstruction	EE	HUANG Chaoran (EE)
39	Phase Shift Detection Evanescent Field Photonics Biosensor with Performance Boosting Strategy	EE	HUANG Chaoran (EE)
40	Exploring the Fundamentals of Topological Photonics	EE	SUN Xiankai (EE)
41	Optimization of Interdigital Transducers	EE	SUN Xiankai (EE)
42	Developing a software platform to implement new algorithms for tracking with wearable sensors	EE	ZHAO Ni (EE)
43	Give picture life	IE	CHAN Chun-Kit, Calvin (IE)
44	Enhancing Video Transmission with Loss-Resilient Codec and Package Self-Drop based on Image Segmentation	IE	CHEN He, Henry (IE)
45	On the Zero-Error Shannon Capacity of Graphs	IE	GOHARI Amin (IE)
46	Minimum Entropy Coupling	IE	LI Cheuk Ting (IE)
47	A new efficient simulation method for multiple access channel	IE	LI Cheuk Ting (IE)
48	Improving HDR Plus Technique for Mobile Photography	IE	XUE Tianfan (IE)
49	Algorithmic Pricing and Collusion with Evolutionary Game Theoretic Approach	SEEM	CHEN Nan (SEEM)

50	Optimization Methods for the Patient Assigning Problem at CUHK Medical Center (Group)	SEEM	SO Man-Cho, Anthony (SEEM)
51	An Efficient Optimization Framework for Learning General Signed Graphs from Smooth Signals	SEEM	SO Man-Cho, Anthony (SEEM)
52	Graph Learning from Signals	SEEM	SO Man-Cho, Anthony (SEEM)
53	Improvement on the Incremental Aggregated Riemannian Gradient Method for Distributed PCA	SEEM	WAI Hoi To (SEEM)
54	Rumor Detection in Social Media with Advanced Graph Learning Algorithms (Group)	SEEM	WANG Sib0 (SEEM)
55	Investigate Machine Learning Models for Cardinality Estimation: An Interactive Approach	SEEM	YU Xu, Jeffrey (SEEM)