# UREx Projects Conducted in Academic Year 2024/2025

| Project Title | Project Type | Student Name | Supervisor | Co-supervisor | Project Status |
|---|---|---|---|---|---|
| A Multi-modal Thermo-haptic Head-mount Display for Immersive VR | Group | Li Yunxuan<br>Li Xinyu<br>Peng Yalin<br>Jing Mingyuan | Dr Cai Shaoyu | | Completed |
| AIChE Chem-E-Car Competition - Chemical Team | Group | Kevin Lius Bong<br>Max Phang Ka Kyn<br>Ngo Van Anh | Dr Wang Chi-Hwa | | Completed |
| AIChE Chem-E-Car Competition â Mechanical and Electrical Teams | Group | David Michael Indraputra<br>Felix Gilang Claychia<br>Ji Hyunmin | Dr Wang Chi-Hwa | | Completed |
| Aircraft Sizing and Stability for Unmanned Glider | Group | Aditya Satish Nalini<br>Kim Jihong<br>Chinmay Jolhe | Dr Tay Chien Ming, Jonathan | | Completed |
| Algorithmic Optimization for Error Reduction in Robotic Packaging Systems | Group | John Ashwin Letchmanan<br>Lee Lehan | Dr Birgersson, Karl Erik | Dr Kensuke Harada | Completed |
| An Acoustic-Based Approach to Mitigating Sleep Bruxism and Snoring Disorders | Group | Huang Wanqi<br>Chen Xuanyi | Dr Chua Dingjuan | | Completed |
| Analog In-Memory Computing using Non-volatile Device Technologies | Group | Li Xiaoyang<br>Miao Congwen | Dr Fong Xuanyao | | Completed |
| Assessing the impact of sedimentation on the efficacy of hybrid solution | Individual | Vanessa-Ashley Teong | Dr Gin Yew-Hoong, Karina | | Completed |
| Association of mitochondrial metabolism gene expression and pancreatic  adenocarcinoma progression | Individual | Huang Yuxin | Dr Cheow Lih Feng | | Completed |
| Autonomous Drones to ensure quality for Precast Components | Individual | Bazil Bin Akhbar Angullia | Dr Kuang Sze Chiang, Kevin | | Completed |
| Autonomous Surface Vessel 4.0 Actuation | Individual | Zou Yunchuan | Dr Goh Cher Hiang | | Completed |
| AUV5 Acoustics | Individual | Chan Zun Mun Terence | Dr Goh Cher Hiang | | Completed |
| Battery Management System for FSAE Car | Group | John Yeap Teik Jien<br>Tung Hao Xuan<br>Zhang Haoyu | Dr Lim Hong Wee | | Completed |
| Battery Management System for FSAE Car | Group | Chulpaibul Jiranun | Dr Lim Hong Wee | | Completed |
| Benchmarking Sensors for control of an Autonomous Underwater Vehicle | Individual | Leong Deng Jun | Dr Zhu Hongjiao | | Completed |
| Bioactive Extracellular Vesicles (EVs) From Mesenchymal Stem Cells In Silk Fibrin Hydrogels For Wound Healing | Group | Estella Lim Zhi Yu<br>Ng Luo Xuan | Dr Leo Hwa Liang | | Completed |
| BumbleBee's Autonomous Underwater Vehicle 5.0 Power Architecture Design and Implementation | Group | Natalia Elyssa Chan<br>Duan Yihe | Dr Goh Cher Hiang | | Completed |
| Cansat Competition | Group | Tejashri Srinivasan<br>Vishwanath Annanya | Dr Ee Wei Han, Eugene | | Completed |
| Characterising the electroresponsive behaviour of silk hydrogels under electrical stimuli | Individual | Sharleen Hu Ningfang | Dr Leo Hwa Liang | | Completed |
| Characterization of silk cocoons for functional and cellular behavior insights in tissue engineering | Individual | Jolene Soh En Yi | Dr Leo Hwa Liang | Dr James Goh | Completed |
| Charger Integration for FSAE Car | Group | Senthil Arumugam Palvesraj<br>Tai Zhen Xian, Louis<br>Li Ziqi<br>Naila Faiqah Binte Muhammad Azhar | Dr Lim Hong Wee | | Completed |
| Circulating biomarkers for molecular diagnosis | Individual | Chan Jia Hui | Dr Shao Huilin | | Completed |

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|---|---|---|---|---|---|
| Classifying of amino acid functional groups in different sources of silk | Individual | Pan Zihao | Dr Leo Hwa Liang | | Completed |
| Commercial Kitchen Emissions Indoors and its Impacts on the Environment and Human Health in Singapore. | Group | Elisha Foo Zhi En<br>Choo Jia Ying Jaclyn | Dr Yu Liya | | Completed |
| Comparing the effectiveness of AI detection methods: Perplexity analysis vs zero-shot classifiers | Group | Hu Tongyuan<br>Muhammad Hamizan Bin Abdul Jalil<br>Ting Kwok Ian | Dr Wang Guanyi | | Completed |
| Computational Analysis of Electrocatalysts for Carbon Dioxide Conversion into Value-Added Products | Group | Richard Lim Wei Boon<br>Goh Zhan Hong<br>Dong Yihai<br>Feng Haoyuan | Dr Sergey Kozlov | | Completed |
| Conceptualizing, creating and testing automated printing, reinforcement method and assembly of 3DCP PPVC modules | Group | Justin Adrian Halim<br>Vivien Trisha Javin | Dr Du Hongjian | | Completed |
| Design and Simulation of Noise-Resilient Geometric Quantum Gates for superconducting circuits | Individual | Lim Hong Wei | Dr Wang Chao | | Completed |
| Design of Mixed Matrix Flat Sheet Membranes for CO2/N2 Separation Using Metal-Organic Cage Fillers | Individual | Lee Seung Jun | Dr Tan Jovan | Dr Jia Shuyue, Dr Zhang Sui | Completed |
| Designing a long-lasting sustainably powered continuous glucose monitor | Group | Shah Anvi Sudhanshu<br>Karthik Sivasubramanian<br>Yandapalli Sri Dhanya | Dr Chua Dingjuan | | Completed |
| Develop a caring AI assistant that personalizes reminders & messages based on users' schedules | Individual | Li Jiayi | Dr Xu Yuecong | | Completed |
| Developing a Dart System for the RoboMaster University Championship | Group | Lim Ji Yong<br>Teh Wei Sheng<br>Lin Hong Yi<br>Cai Jiali | Dr Lim Li Hong Idris (Lin Lihong Idris) | | Completed |
| Developing modular search and rescue robots for enhancing disaster response capabilities | Group | Chao Jincheng<br>Fang Tianchi<br>Du Yanzhang | Dr Shi Fan | | Completed |
| Development and Control of a Robotic Arm for the RoboMaster University Championship | Group | Cheng Yi<br>Lee Jia, Claire | Dr Lim Li Hong Idris (Lin Lihong Idris) | | Completed |
| Development of a low-cost underwater communication system | Individual | Ni Jiahui | Dr Mandar Anil Chitre | | Completed |
| Development of a Method for Material Separation to Prevent Antimicrobial Resistance. | Individual | Rajan Neha | Dr Birgersson, Karl Erik | | Completed |
| Development of a Portable Wearable Soft Robotic Glove for Stroke Rehabilitation to Enhance Hand Motor Functions in Activities of Daily Living | Group | Chong Hui Hsuen Nicole<br>Nabillah Bee Binte Basheer Ahmad | Dr Yeow Chen Hua (Yao Chenhua) | | Completed |
| Development of a Scalable Framework for Life Cycle Cost Analysis | Individual | Wang Siyu | Dr Ghahramani Ali | | Completed |
| Development of Autonomous Aiming System in the RoboMaster University Championship | Group | Wong Ching Whee<br>Yee Zhan Xian Carlton | Dr Chew Wanlong Nicholas | | Completed |
| Development of Autonomous Movement and Navigation of a Sentry Robot for the RoboMaster University Championship | Group | Wong Weng Hong<br>Ng Weiliang | Dr Lim Li Hong Idris (Lin Lihong Idris) | | Completed |
| Development of Optical Spectroscopy and Imaging for Biomedical Applications | Individual | Tan Yong Kang | Dr Chen Nanguang | Dr U.S Dinish | Completed |
| Development of smart wearable focusing on scent emission by using laser technology on solid perfumes | Group | Liu Yuhui<br>Wang Bo<br>Wang Yubo | Dr Cai Shaoyu | | Completed |
| Directed Evolution for Optogenetics | Individual | Chai Chin Wei | Dr Poh Chueh Loo (Fu Juelu) | | Completed |

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|---|---|---|---|---|---|
| Drivetrain design for FSAE car. | Group | Aung Khant Min<br>Pemmasani Prabakaran Rashmeta Sai<br>Than Kok Weng<br>Sharavana Kumar Visagan | Dr Lim Hong Wee | | Completed |
| Dynamically Controlled Adjustable Wing for FSAE Car | Group | Kalyanasundaram Avaneesh<br>Shruti Moovendran<br>Aroza Anson | Dr Lim Hong Wee | | Completed |
| Efficient Diffusion: Towards One-Shot Diffusion Transformer Compression. | Individual | Li Kunjun | Dr Wang Xinchao | | Completed |
| Enhancing Breast Biopsy Precision with VR/AR-Assisted Vacuum Assisted Excision | Group | Huang Kai Xing<br>Wang Yu Wei<br>Wong He Kai | Dr Yen Ching-Chiuan | | Completed |
| Enhancing safety helmets with solar-powered cooling systems to improve user comfort in the tropics. | Individual | Chye Yi De | Dr Tay En Rong, Stephen | | Completed |
| Enhancing the Hydrodynamics of AUV 5.0 by modifying its shell form. | Individual | Clement Joshua Dev | Dr Goh Cher Hiang | | Completed |
| Enhancing the Usability of Electrochemical CO2 Capture Setup through Streamlined and Smarter Design | Individual | Tan Kean Ping | Dr Jing Yan | | Completed |
| Evaluating the Feasibility and Impact of Redesigning Plastic Recycling Systems | Individual | James Wang | Dr Tan Jovan | | Completed |
| Exploration of Mylar for Human-Computer Interaction Applications | Group | Adam Choo Wen Wu<br>Vina Setiawaty | Dr Zheng Zhihan Clement | | Completed |
| Exploring the visual representation of the dimensionality of music through GANs | Group | Rammdarshan S/O Ramesh<br>Ngo Yong Sing<br>Marcus Ong Qin Yuan | Dr Shen Bingquan | | Completed |
| Fiber Enabled Wireless Communication for Wearable and Implantable Flexible Electronics | Individual | Davin Chua Jing Han | Dr Tural Khudiyev | | Completed |
| FPGA implementation of HFT trading logic. | Individual | Prakash Siddhi Ganapathy | Dr Chua Dingjuan | | Completed |
| Fuselage Structural Sizing and Testing of a Battery-powered RC Fixed-wing Aircraft | Group | Song Cheng Yan<br>Lee Mun Xuan<br>Atif Nainar Hussain<br>Justin Lee Ke Zen | Dr Tay Chien Ming, Jonathan | | Completed |
| GOON Arm | Group | Ng Ee Xin<br>Teo So Ngee<br>Sim Meng Teck<br>Lam Wing Ha, Henry | Dr Sing Swee Leong (Sun Ruilong) | | Completed |
| High-Performance Fiber-Based Artificial Muscles from Advanced Micro/Nano Stimuli-Responsive Polymers | Group | Aliyev Eshgin<br>Gasimov Said | Dr Tural Khudiyev | | Completed |
| How can technology improve the accessibility of "stART" to build emotional literacy through art? | Individual | Chun Jiyun | Dr Lee Sang Won | | Completed |
| Humidity, Society, and Architecture in Singapore | Individual | Altoaimi Lina Walid S | Dr Widodo, Johannes | | Completed |
| Improved Detection of Fetal Distress using Visual Annotations on Cardiotocography (CTG) | Individual | Lim Jia Le | Dr Chong Seow Khoon Mark | | Completed |
| Innovative Aerodynamic device for FSAE Car | Group | Brians Tjipto Meidianto<br>Agarwal Jatin<br>Tan Javier<br>Ratnavibusena Don Shenal Ashendra | Dr Lim Hong Wee | | Completed |
| Innovative Design for Composite Mould | Group | Kulkarni Mohit Kuldip<br>Looi Zi Hann<br>Iyer Aditya Sankar<br>Lee Wonn Kye | Dr Lim Hong Wee | | Completed |

| Project Title | Project Type | Student Name | Supervisor | Co-supervisor | Project Status |
|---|---|---|---|---|---|
| Investigating methodologies for General AI Agents to interact with multimodal environments | Individual | Chen Haorui | Dr Wang Xinchao | | Completed |
| Investigating the effect of gamified learning on the enhancement of 3D modelling problem-solving skills in first-year undergraduate | Group | Franklin Lee Shee Jie<br>Mohamed Bilal S/O Saibudeen | Dr Bina Rai | | Completed |
| Investigating Thermal Comfort of Microforest in City Centre | Individual | Ding Yitian | Dr Veerasekaran S/O P Arumugam | Dr Adrian Loo Hock Beng | Completed |
| Investigation on 2D material for spintronics device | Individual | Zhang Miaoding | Dr Ahmet Avsar | | Completed |
| Jellyfish2 vision systems | Individual | He Shaoliang | Dr Goh Cher Hiang | | Completed |
| Life Cycle Assessment of Plant-Based Food Production | Individual | Ivan Candra Gunawan | Dr Jangam Sachin Vinayak | Dr Khoo Hsien Hui (from A*STAR SimTech) | Completed |
| Life cycle study comparing carbon emissions from pyrolysis vs incineration of municipal solid waste | Individual | Zhu Fangze | Dr Tan Jovan | | Completed |
| Life cycle study comparing carbon emissions from pyrolysis vs incineration of municipal solid waste | Individual | Calvin Khoo Wei En | Dr Tan Jovan | | Completed |
| Lightweight rims for FSAE Car | Group | Raphael Hong Yi Lin<br>Loh Zhi Hao Jonavan<br>Aakash Jayadeep<br>Fong Ken Khai | Dr Lim Hong Wee | | Completed |
| Lightweight upright and hub design for FSAE suspension system | Group | Tiah Jeng Ern<br>Schuyler Seow Yong Ye<br>Eng Sok Chek<br>Koh Ruo Xin Marissa | Dr Lim Hong Wee | | Completed |
| mBag: A Bag with You | Group | Zhai Yihong<br>Zhu Yangyi | Dr Ang, Marcelo Jr Huibonhoa | Dr Zhuang Mengjin | Completed |
| Microwave-assisted biomass cellulose extraction for the synthesis of cellulose-based hydrogels. | Individual | Chia Min Shen | Dr Yu Ka Ming | | Completed |
| Motion Simulation Rig for eFSAE Drivers Training | Group | Layog Ethan Andrei Belo<br>Jai Vinod Kumar Rahul<br>Anson Chua Zhi Hong | Dr Lim Hong Wee | | Completed |
| Motoring to a cure: the role of STUB1 and ZFPL1 in motor neuron degeneration | Individual | Huang Zifu | Dr Andrew William Holle | Dr Crystal Yeo Jing Jing | Completed |
| Next-Generation Artificial Muscles for Advanced Robotics | Group | Wang Chun Yi<br>Bryan Hong Hee Shuen<br>Ho Sze Yuan | Dr Tural Khudiyev | | Completed |
| Nitrogen cycle processes in Singapore's coastal environments | Individual | Lin Shuowang | Dr Gin Yew-Hoong, Karina | | Completed |
| Novel Wien Filters as Achromatic Mass Filter in Ion Beam Applications | Individual | Muhammad Tawakul Bin Haji Abdullah | Dr Van Kan, Jeroen Anton | | Completed |
| Object detection and classification in unknown indoor environment using swarm of drones for SAFMC | Group | Khoo Dylan<br>Phua Lock Hian | Dr Elliot Law | | Completed |
| Optimization of AIOT system in Agritech | Individual | Cheah Hao Yi | Dr Soh Eng Keng | Dr Veerasekaran Arumugam (veera.s@nus.edu.sg) | Completed |
| Optimized Drone Path Planning using Random-Sampling Based Planners | Individual | Ranjan Meera | Dr Lin Feng | Dr John Tan Guan Zhong | Completed |
| Optimizing Traffic Flow in Autonomous vehicle Fleets Using V2V Communication and Swarm Intelligence | Group | Kwak Minchai<br>Siow Jun Yu<br>Qi Xinrui | Dr Prahlad Vadakkepat | | Completed |
| Photonic nanojet lithography: understanding the effects of geometric shapes on photonic nanojets | Individual | Ip Wing Fai Ronald | Dr Ng, Vivian | | Completed |
| pH-Responsive Silk Fibroin Hydrogels for Stent Thrombosis Prevention | Individual | Liow Zhi Qi, Sherlyss | Dr Leo Hwa Liang | Dr James Goh | Completed |

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|---|---|---|---|---|---|
| Piezoelectric Sensors for Advanced Physiological Health Monitoring | Individual | Muhamad Hidayat B Muhamad A | Dr Tural Khudiyev | | Completed |
| Please refer to uploaded application form due to character limit exceeded. | Individual | Charlotte Chua Jia Xuan | Dr Andrew William Holle | | Completed |
| Predicting Off-Flavors and Toxins in Reservoir Waters from Algal Blooms Using Machine Learning | Individual | Tan Yu Jia | Dr Gin Yew-Hoong, Karina | | Completed |
| Predicting Optimal Hardware Setup for Algorithms Based on Characteristics | Group | Akaash Dhayalan<br>Ang Zi Le, Telfer<br>Alfred Goh | Dr Rajesh Chandrasekhara Panicker | | Completed |
| Predictive analysis of effects of alcohol consumption on various types of cancer | Individual | Chow Jie, Seth | Dr Motani, Mehul | | Completed |
| Redesigning NUS Mars Rover Chassis for Enhanced Performance in Extreme Environments | Group | Datta Anitej<br>Bhadra Parv<br>Akash Mukherjee | Dr Ee Wei Han, Eugene | | Completed |
| Reinforcement Learning from Human Feedback: Principles and Applications | Individual | Eu Zheng Xi | Dr Xu Yunbei | | Completed |
| Search strategies in unknown indoor environments using swarm of drones for SAFMC 2025 | Group | Tong Jing Yen<br>David Chong Joon Wei | Dr Elliot Law | | Completed |
| Shape Prior Guided 4D Heart Reconstruction via Multiview Cine MRI for Cardiac Digital Twin | Individual | Liu Xiaoyue | Dr Li Lei | | Completed |
| Simulation and Analysis of Amplifier Circuits Based on Electrochemical Transistors Using SPICE | Individual | Xiong Weixiang | Dr Zhu Chunxiang | | Completed |
| Simulation and Characterization of Multilayered Magnonic Crystal for Bandgap Tunability | Individual | Chew Yong Zhang | Dr Ng, Vivian | | Completed |
| Single-Stroke Infill Generation in 3DCP Modules with M&E Recesses Using Grasshopper 3D | Individual | Cheah Hao Yuan | Dr Rudi Maria F. Stouffs | | Completed |
| Smol Speccy- A Spectrometer to Detect Signs of Life on Mars | Group | Seow Zhi Yong, Justin<br>Narasimhan Nandagopa<br>Kong Jin Yu | Dr Ee Wei Han, Eugene | | Completed |
| Soil hydraulic conductivity analysis over different land use | Individual | Lin Fuyang | Dr Gin Yew-Hoong, Karina | | Completed |
| Strain Mediated Nonreciprocal Regulation of Third Harmonic Generation in Nonlinear Optical Materials | Individual | Ouyang Yihang | Dr Konstantin Sergeevich Novoselov | | Completed |
| Structural design of a cargo bike using sheet metal | Individual | Vanessa Liew Hui En | Dr Lim Hong Wee | | Completed |
| Structural design of a cargo bike using sheet metal | Individual | Yang Yeshuai | Dr Lim Hong Wee | | Ongoing |
| Surface-isolated excitations and magneto-optical effects in magnetic nano-ordered structures | Individual | Wang Yanxiao Austin | Dr Ng, Vivian | | Completed |
| Sustainable photovoltaic fibres capable of storing and harvesting energy. | Group | Yong Guan Jie<br>Koh Jye Sheng, Zenson<br>Jordan Loh Jun Lin | Dr Lee Wee Siang Vincent | | Completed |
| Trash into Treasure: Comparing Viabilities of Converting Bio-Waste Products into High-Value Consumables | Group | Anson Low Kwan Wei<br>Pang Jian Zhang<br>Koh Kok Hong<br>Koh Ying Xi | Dr Yu Ka Ming | Dr Yudha Dwi Prasetyatama | Completed |
| Use cases of Large Language Models (LLM) for cybersecurity in the banking and finance industry | Individual | Tan Yang Keat | Dr Wang Zhiguo | | Completed |
| Valorising Food Waste into Lactic Acid | Group | Tan Mei Ling, Felicia<br>Alanis Joy Tay | Dr Tong Yen Wah | Dr Tan Jovan | Completed |
| Wearable Fabric Electronics | Group | Shah Jay<br>Jain Arhaan Vikram | Dr Tural Khudiyev | | Completed |

# UREx Projects Conducted in Academic Year 2025/2026

| Project Title | Project Type | Student Name | Supervisor | Co-supervisor | Project Status |
|---|---|---|---|---|---|
| Accumulator Design and Optimization for FSAE Car | Group | PI Raamanathan | Dr Lim Hong Wee | | Ongoing |
| | | Jedd Laurence Buena Palattao | | | |
| Affordable Manufacturing of Customized Floating Vessels | Group | Oh Keng Yong | Dr Zhu Hongjiao | | Ongoing |
| | | Ng Zing Hng | | | |
| AI-Driven Antibody Sequence Design and Optimization for Enhanced CDR Diversity and Binding Potential | Individual | Lee Hui Zhen | Dr Alberto Corrias | Dr Yap Thai Leong | Ongoing |
| AI-Optimized Radiative-Cooling Metasurface for EV Buses in Singapore | Individual | Zhu Yuxin | Dr Qiu Chengwei | Dr Tang Kok Zuea | Ongoing |
| Analyzing the effectiveness of Image or Text to 3D generative workflows for iterative design processes and visualization across various platforms within architectural and design contexts. | Group | Liang Li Yee | Dr Gabriel Elijah Lipkowitz | | Ongoing |
| | | Tay Feng Lin | | | |
| Application of Large Language Models in Quantitative Finance Education: Bridging the Academic-Industry Gap | Group | Vernon Lee Zhi Yi | Dr Chia Eng Seng | | Ongoing |
| | | Sung Jian Ting Matthew | | | |
| Application of Stereo Vision Algorithms on Long-Wave IR Cameras | Individual | Wei Haowen | Dr Lin Feng | | Ongoing |
| Artificial Intelligence to detect defects in hydrogen gel printing | Group | Justin Poon Junjie | Dr Sing Swee Leong (Sun Ruilong) | | Ongoing |
| | | Ravichandran Vaishnavi | | | |
| | | Ng Chao En, Karl | | | |
| | | Deng Haofu | | | |
| Assistive Depth Estimation System for Visually Impaired in Dynamic Environments | Group | Hao Yian | Dr Lim Li Hong Idris (Lin Lihong Idris) | | Ongoing |
| | | Li Linying | | | |
| | | Hu Xiran | | | |
| | | Wong Jian Bin | | | |
| Automated drink dispensing machine and automation feasibility under a B2C setting | Group | Tsai Ho-Hsun | Dr Royston Shieh Teng Wei | | Ongoing |
| | | Neal Ng Seng Yew | | | |
| Autonomous Drone Swarm for Singapore Amazing Flying Machine Competition Category E | Individual | Yeo Xin Yue | Dr Elliot Law | | Ongoing |
| Autonomous Drone Swarm for Singapore Amazing Flying Machine Competition Category E | Group | Seow Rui Kai, Reynard | Dr Elliot Law | | Ongoing |
| | | Krithikh Gopalakrishnan | | | |
| Autonomous Electrical and Software Subsystems for the 2026 CanSat Competition | Group | Singh Siddhant Narayan | Dr Ee Wei Han, Eugene | | Ongoing |
| | | Gupta Manya | | | |
| | | Saravanan Kaushik | | | |
| Centric World Models for Robotic Manipulation | Individual | Liu Hanyu | Dr Shi Fan | | Ongoing |
| Chassis and Aerodynamics Design and Optimization for FSAE Car | Group | Liew Song Ying | Dr Lim Hong Wee | | Ongoing |
| | | Ryan Leong Rui Heng | | | |

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|---|---|---|---|---|---|
| Chassis Mould Design and Optimization for CF Monocoque of a FSAE Car | Individual | Wong Yi Tung | Dr Lim Hong Wee | | Ongoing |
| Comparing Carbon Fluxes in Terrestrial and Mangrove Forest Ecosystems | Group | Amberly Pock Xin Yi | Dr Simone Fatichi | | Ongoing |
| | | Hannah Hoo Si En | | | |
| Control of Balance and Stability in Lower Limb Exoskeleton under Variable Conditions | Group | Zhang Luoxi | Dr Guillaume Adrien Sartoretti | | Ongoing |
| | | Zhang Yuening | | | |
| Conversion of Agricultural and Food Waste into Sustainable and Biocompatible Biomaterials for Biomedical Applications | Group | Kothamasu Manusri | Dr Zhang Yamin | | Ongoing |
| | | Amrita Anbuchezhian | | | |
| | | Sameer Mahlawat | | | |
| | | Clarisse Chin Xiao Hwei | | | |
| Cooling Design and Optimization for FSAE Car | Individual | Chong Kai Jie | Dr Lim Hong Wee | | Ongoing |
| Design and FPGA Implementation of a High-Performance Superscalar RISC-V Processor | Individual | Zhu Wenbo | Dr Rajesh Chandrasekhara Panicker | | Ongoing |
| Design and Implementation of Arena Infrastructure for DJI Robomaster Competition | Group | Shah Jainam Amit | Dr Chew Wanlong Nicholas | Dr Xu Yuecong | Ongoing |
| | | Gupta Shashwat | | | |
| | | Ryan Vernados | | | |
| | | Song Yifei | | | |
| Design and Optimization of Spin-sensitive superconducting LC resonator | Individual | Liu Ziheng, Clifton | Dr Steven Touzard | | Completed |
| Design of a Simple Output Capacitor-Less LDO with Transient-Assist for On-Chip Regulation | Individual | An Wei Teck | Dr Chua Dingjuan | | Ongoing |
| Design Trade-Offs Between Hinge and Anatomically Inspired Elbow Joints in Humanoid Robots | Individual | Punnarunothai Waridtha | Dr Chui Chee Kong | | Ongoing |
| Designing a Lightweight Drone for SAFMC Participation | Group | Celeste Tan | Dr Elliot Law | | Completed |
| | | Ashlee Chang Yee Ting | | | |
| Development of a Drone Assistance System for the University Rover Challenge Delivery Mission | Group | Bindawala Aarav | Dr Ee Wei Han, Eugene | | Ongoing |
| | | Kajaria Shreevrind | | | |
| | | Kothari Smeet Ronak | | | |
| | | Srimal Trijal | | | |
| Development of a non-invasive glucometer using Graphene Field Effect Transistors (gFETs) | Group | Li Shanxin | Dr Leo Chen Huei (Liang Zhenhui) | | Ongoing |
| | | Kong Ye Xiang, Ray | | | |
| Development of advanced satellite visualization platform for next-gen space missions & operations. | Group | Fan Xinzhe | Dr Mihindukulasooriya Sheral Crescent Tissera | Dr Abhishek Rai | Completed |
| | | Luo Runcheng | | | |
| | | Lin Weitong | | | |
| | | Che Chenyu | | | |
| Development of an Internally Ergonomic and Collapsible FPV Quadcopter to collaborate with ASV | Individual | Ahuja Harsh | Dr Zhu Hongjiao | Dr Lin Feng | Ongoing |
| Development of Edge-Optimized Algorithms for Robotics | Group | Zheng Kaiwen | Dr Lin Feng | | Ongoing |
| | | Li Ziyu | | | |
| Development of fast-responding reporter proteins for rapid whole cell biosensors | Individual | Liu Yuxuan | Dr Poh Chueh Loo (Fu Juelu) | | Ongoing |

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|---|---|---|---|---|---|
| Dextera | Group | Sudhakaran Krishita | Dr Yeow Chen Hua (Yao Chenhua) | | Ongoing |
| | | Noor Sameeha | | | |
| Effect of Mixing Order on Metastable Solvation Structure in LHCE for LMB Performance | Individual | Lu Zhimo | Dr Kim Sang Cheol | | Ongoing |
| Effect of recycled carbon capture by-product as filler in concrete | Group | Tan Tin Chong | Dr Du Hongjian | | Ongoing |
| | | Quay Genk Swee Daniel | | | |
| Efficiency and optimising propulsion systems for small UAV | Group | Sunith Sunil Mani | Dr Tay Chien Ming, Jonathan | | Ongoing |
| | | Theodore Jie Yang Chan | | | |
| | | Jared Goh | | | |
| Electrical Optimisation of a Power Management Module for Mars Rover Systems | Group | Mahajan Arnav | Dr Ee Wei Han, Eugene | | Ongoing |
| | | Shruthi Raja | | | |
| | | Srivastava Dhruv | | | |
| | | Bihani Shriradhya | | | |
| Exploring 3D printer machines as crafting tools | Individual | Goh Yu Yan | Dr Zheng Zhihan Clement | | Ongoing |
| Extraction Technology for Food Waste - The Exploration of Green Solvent Extraction and Ultrasound-Assisted Extraction | Group | Chew Ker Xyn | Dr Yu Ka Ming | | Ongoing |
| | | Audi Arif Bin Shamsul Nahar | | | |
| | | Muhammad Huzaifah Baharudin | | | |
| | | Ong Xin Yu | | | |
| FPGA Controlled Photonic Ising Machine for Hardware Based Optimization with Real Time Feedback | Individual | Mayukh Ghosh | Dr Danner, Aaron James | | Ongoing |
| Front Suspension Design and Optimization for FSAE Car | Individual | Liu Xiyun | Dr Lim Hong Wee | | Ongoing |
| Future frontiers: GenAI and immersive reality | Individual | Muthukumaran Yogeeswaran | Dr Khoo Eng Tat | | Ongoing |
| Hardware design of a self-sufficient Lora based payload capable of RF Sensing and Aerial Imaging. | Group | Cheah Tian Ler | Dr Abhishek Rai | Dr Sii Zhi Ying (sii.zy@nus.edu.sg) | Ongoing |
| | | Jacob George | | | |
| High Altitude Weather Balloon Project | Group | Sai Wai Phyo | Dr Goh Shu Ting | | Ongoing |
| | | Alvin Tan Yean Liang | | | |
| | | Nathan Bong Neng Quan | | | |
| High Voltage PCB Simulation and Validation for FSAE Car | Group | Hsu Yu-Chen | Dr Lim Hong Wee | | Ongoing |
| | | Wong Yuan Hong | | | |
| Hydrodynamic stress and Biochemical Reconfiguration of Mangrove Seedlings under Irregular Wave Loading | Group | Wong Kang Lim | Dr Lei Jiarui | | Ongoing |
| | | Jolene Wong | | | |
| Identification and Characterization of Ammonia-Oxidizing Bacteria | Individual | Vu Thi Kim Ngan | Dr Gin Yew-Hoong, Karina | Dr Te Shu Harn | Ongoing |
| Integrated Autonomous Mobile Robot-UAV System for Efficient Maintenance of Floating Photovoltaic Farms | Group | Chang Yichun | Dr Abdullah Al Mamun | | Ongoing |
| | | Qi Ye | | | |
| | | Cao Jiashuo | | | |
| | | Li Minxi | | | |
| Integrating Mangroves with Coastal Drainage Engineering to Enhance Flood Resilience | Individual | Joanna Goh En Qian | Dr Gin Yew-Hoong, Karina | | Ongoing |

| Project Title | Project Type | Student Name | Supervisor | Co-supervisor | Project Status |
|---|---|---|---|---|---|
| Investigating spatial and temporal distribution of PFAS in Singapore's reservoirs using EOF analysis | Individual | Michelle Yap Mae Lyn | Dr Gin Yew-Hoong, Karina | | Ongoing |
| Kinematically Constrained Generative Diffusion Modelling for Corrective Feedback in Rehabilitation | Individual | Arnav Parag Salkade | Dr Armin Lederer | | Ongoing |
| Large Language Models (LLMs) - Based Multi-Agent Reinforcement Learning (MARL) | Individual | Zeng Jinwen | Dr Guillaume Adrien Sartoretti | | Ongoing |
| Life Cycle Assessment of Hydrotreated Vegetable Oil Production from Used Cooking Oil in Singapore | Individual | Wan Yuan Yun | Dr Jangam Sachin Vinayak | | Ongoing |
| Material Testing for UAV weight optimization | Group | Selvakumar Silambuchelvan | Dr Tay Chien Ming, Jonathan | | Ongoing |
| | | Shrimal Abhinandan | | | |
| Materials and Structural Design of Packaging for Wearable Biomarker Monitoring | Individual | Ma Yiming | Dr Liu Yuxin | Dr Wang Chan | Ongoing |
| Mechanical Degradation of Silk Scaffolds and Its Impact on ACL Reconstruction | Individual | Kelly Tan Shu Min | Dr Leo Hwa Liang | | Ongoing |
| Membrane-aerated biofilm reactor for sustainable aquaculture wastewater treatment | Group | Alsaeed Alzahraa Abbas A | Dr Hu Jiangyong | | Completed |
| | | Pearl Edelina Binte Zuwardy | | | |
| Mitigating Asymmetric Plume Profiles in Planar Hall Thrusters for Improved Space Propulsion Efficiency | Group | Liew Kang Zhen | Dr Ee Wei Han, Eugene | | Ongoing |
| | | Lee Chong Sheng | | | |
| Mitigating Mechanical Recycling-Induced Degradation in Commodity Plastics: A Framework | Individual | Zowie Ong Zu Yi | Dr Tan Jovan | | Ongoing |
| Multi-Modal Haptic Interfaces for Immersive Virtual Reality | Group | Gu Mingyoujia | Dr Cai Shaoyu | Dr Khoo Eng Tat | Ongoing |
| | | Jonathan Sugiharto Santosa | | | |
| | | Ian Choo Tzie Zheng | | | |
| | | Prakhunviroon Sararaksh | | | |
| Neuroehab | Individual | Zhang Zehua | Dr Gabriel Elijah Lipkowitz | | Ongoing |
| Onboard Localization and Mapping for Nano-Drone Swarms | Individual | Rex Koh Jun Kai | Dr Elliot Law | | Completed |
| On-device Speech Command with Noise Cancellation | Individual | Wang Zilun | Dr Rajesh Chandrasekhara Panicker | Dr Biplab Sikdar | Ongoing |
| Optimisation and Integration of Centre Feeding Mechanism in RoboMaster Sentry Robot | Individual | Ni Hang | Dr Chew Wanlong Nicholas | | Ongoing |
| Optimisation of Silk-based Conductive Fibrous Bio-ink for Cardiac Patch Tissue Engineering | Individual | Janelle Tang Xinli | Dr Leo Hwa Liang | Dr James Goh | Completed |
| Optimized RoboMaster Hero for High Accuracy Long Range Shooting | Group | Daniel Elias Boh Shao Gee | Dr Chew Wanlong Nicholas | | Ongoing |
| | | Jaron Ng Jin Rui | | | |
| Optimizing Multi-Robot Collaboration using Turtlebot3 | Group | Jansen Ken Pegrasio | Dr Chew Wanlong Nicholas | Dr Royston Shieh Teng Wei | Ongoing |
| | | Chen Yu Hsin | | | |
| Passive Daytime Radiative Cooling and PCM Integration: Enhancing the Stability of Solar Thermoelectric Generators | Group | Shanmugam Indirapratibha | Dr Shin Sunmi | | Ongoing |
| | | Elijah Lee Pereira | | | |
| PDM and Dashboard System Design for FSAE Car | Group | Ng Yan Kai | Dr Lim Hong Wee | | Ongoing |
| | | Jonathan Lee Jie Ann | | | |

| Project Title | Project Type | Student Name | Supervisor | Co-supervisor | Project Status |
|---|---|---|---|---|---|
| Radar based collision avoidance system for unmanned aerial vehicles (UAVs) | Group | You Qixuan<br>Ang Ding Li Victor<br>Weng Xian Yang | Dr Koenraad Mouthaan | | Ongoing |
| Real-Time Vital Sign Detection Using FPGA-Based FMCW Radar | Individual | Dinesh Valavan | Dr Chua Dingjuan | | Ongoing |
| Rear Suspension Design and Optimization for FSAE Car | Group | Nur Irsyad Bin Abdul Wahab<br>Jasmine Nurul Izza Bachtiar | Dr Lim Hong Wee | | Ongoing |
| RecoMod | Group | Sim Hong Wei<br>Laris Tan Shi Xuan<br>Siddharth S Arumuganainar | Dr Tan Chin Hon | | Ongoing |
| Silicone 3D Printing: Streamlining Custom Prosthetic Workflow | Individual | Yeong Reiko | Dr Yen Ching-Chiuan | | Completed |
| Simulation and Shape Tuning of Magnonic Crystal Structures for Spin Wave Propagation | Individual | Chen Zhehai | Dr Ng, Vivian | | Ongoing |
| Sizing and Design of landing gear for small UAV | Group | Seo Kyuwon<br>Jerrie Bin Zainul Shaffee<br>Tan Xin Kit | Dr Tay Chien Ming, Jonathan | | Ongoing |
| Smart Surveillance System Based on UWB Localization and Robust PCA Video Analytics. | Group | Wang Zhongmin<br>Xu Zihao | Dr Shi Fan | | Ongoing |
| Software design of a full-duplex LoRa payload for transmission of Images from High Attitude Balloon | Group | Guan Yongzhi<br>Goh You Yi | Dr Ankit Srivastava | | Ongoing |
| Spatial Computing for Sports Medicine applications - A wearables empowered biofeedback approach. | Group | Tan Koji Kenshin Pua<br>Bajaj Krishna | Dr Gabriel Elijah Lipkowitz | | Ongoing |
| Stochastic Resource Allocation for Cross-Border Infrastructure under Macroeconomic Uncertainty | Individual | Navya Gupta | Dr Cheung Wang Chi | | Completed |
| Teaching What Classrooms Can't: Industry-Relevant Effective Learning | Individual | Asher Tan Shih | Dr Mark Philip De Lessio | | Ongoing |
| Thermal and Optical Performance of Chlorella vulgaris in Tropical Climate Condition for Photobioreactor Cooling Facades in High-Rise Buildings | Group | Lavinia Geovanni Tanujaya<br>Nguyen Mai Trang | Dr Tong Yen Wah | | Ongoing |
| This project aims to design, fabricate, and validate a custom high-temperature FDM 3D printer capable of sustained 250°C chamber temperatures to process advanced thermoplastics like polyimide (TPI). The printer will be used to fabricate test specimens and prototype components suitable for the thermal and mechanical demands of the space environment. The research will characterize the printed materials' mechanical and thermal properties through tensile testing, thermal analysis (DSC/TGA), and microscopic inspection. The goal is to assess the feasibility of using this accessible manufacturing method to produce reliable, high-performance parts for space applications. | Group | Voon Zhi Kai Tristan<br>Victor Soh Cheng Ying | Dr Ee Wei Han, Eugene | | Ongoing |

| Project Title | Project Type | Student Name | Supervisor | Co-supervisor | Project Status |
|---|---|---|---|---|---|
| VertA: Smart Posture Detection Cushion with ML Sensor Fusion | Group | Paterson Wong Jin Ying | Dr Zhu Hongjiao | Dr Lin Feng | Ongoing |
| | | Darren Chan Kin Hon | | | |
| XCT-Based Surface Metrics for Predicting Stress-Critical and Failure-Prone Regions in AM Metal | Individual | Babu Regan Eshwar | Dr Chng Tat Loon (Zhuang Dalun) | | Ongoing |