Mikaela Angelina Uy

S297 James H. Clark Center
Stanford, CA 93405

Email: mikacuy@stanford.edu
https://mikacuy.github.io

Education

Stanford University — **CA, USA**
Ph.D. Candidate in Computer Science — Sept 2019 – present
Advisor: Prof. Leonidas Guibas

National University of Singapore — **Singapore**
Master of Computing (Computer Science); CAP: 4.58/5.0 — Aug 2017-Jul 2018
Scholarship: NUS Graduate Scholarship for ASEAN Nationals (full masters scholarship)

Hong Kong University of Science and Technology — **Hong Kong**
BSc. in Mathematics and Computer Science — Sept 2013-Aug 2017
CGA: 3.84/4.3; CS CGA: 4.16/4.3; First Class Honors
Scholarship: HKSAR Government Targeted Scholarship (full 4-year university scholarship)

Publications

Point2Cyl: Reverse Engineering 3D Objects from Point Clouds to Extrusion Cylinders
Mikaela Angelina Uy[*], Yen-yu Chang[*], Minhyuk Sung, Purvi Goel, Joseph Lambourne, Tolga Birdal, Leonidas Guibas
CVPR 2022.

Joint Learning of 3D Shape Retrieval and Deformation
Mikaela Angelina Uy, Vladimir G. Kim, Minhyuk Sung, Noam Aigerman, Siddhartha Chaudhiri, Leonidas Guibas
Computer Vision and Pattern Recognition (**CVPR**), 2021.
Website: https://joint-retrieval-deformation.github.io

Deformation-Aware 3D Shape Embedding and Retrieval
Mikaela Angelina Uy, Jingwei Huang, Minhyuk Sung, Tolga Birdal, Leonidas Guibas
European Conference on Computer Vision (**ECCV**), 2020.
Website: https://deformscan2cad.github.io

LCD: Learned Cross-Domain Descriptors for 2D-3D Matching
Quang-Hieu Pham, **Mikaela Angelina Uy**, Binh-Son Hua, Duc Thanh Nguyen, Sai-Kit Yeung
AAAI Conference on Artificial Intelligence (**AAAI**), 2020. **Oral**
Website: https://hkust-vgd.github.io/lcd/

Revisiting Point Cloud Classification: A New Benchmark Dataset and Classification Model on Real-World Data
Mikaela Angelina Uy, Quang-Hieu Pham, Binh-Son Hua, Duc Thanh Nguyen, Sai-Kit Yeung
International Conference of Computer Vision (**ICCV**), 2019. **Oral**
Website: https://hkust-vgd.github.io/scanobjectnn/

PointNetVLAD: Deep Point Cloud Based Retrieval for Large-Scale Place Recognition
Mikaela Angelina Uy and Gim Hee Lee
Computer Vision and Pattern Recognition (**CVPR**), 2018.
Website: https://github.com/mikacuy/pointnetvlad.git

Work Experiences

Autodesk AI Lab — **San Francisco, USA (Remote)**
Research Intern — Jun 2021-Sept 2021

- Learning and understanding of 3D CAD and solid models
- Mentors: Joseph Lambourne, Leonidas Guibas

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Adobe Research **Seattle, USA (Remote)**
Research Intern Jun 2020-Sept 2020

- 3D shape deformation techniques and parametric model understanding
- Mentors: Vladimir G. Kim, Minhyuk Sung, Noam Aigerman, Siddhartha Chaudhuri

Hong Kong University of Science and Technology **Hong Kong**
Research Assistant Sept 2018-Jun 2019

- 3D scene understanding and point cloud learning using deep learning techniques
- Supervisor: Prof. Sai-Kit Yeung

ePropulsion **Songshan Lake, China**
Research and Development Intern Jun-Aug 2016

- Computer vision, machine learning and image processing
- Project: Underwater diver detector over a video feed that is to be implemented on an underwater robot. (Start-up is currently called Navatics)

Jane Street Capital **Hong Kong/New York, USA**
Trader Intern Jun-Aug 2015

- Designed and developed tools to perform data analysis and to identify trading opportunities for the exchange trade funds (ETF) and commodities desks

Teaching

Computer Graphics: Geometric Modeling/Processing (CS 348a) Winter 2021
Teaching Assistant, Stanford

- Taught recitation class once a week, held office hours twice a week, and graded all exams, homeworks and projects in the class.

Introduction to Computer Science (COMP 1021) **Hong Kong**
Lab Assistant, HKUST Sept–Dec 2014

- Taught in lab sessions of the introductory class in Python.

Awards

School of Engineering Fellowship, *Stanford University* 2019-2020

HKSAR Government Targeted Scholarship 2013-2017

- Full university scholarship that is awarded to up to 10 students each year by the Hong Kong government awarded based on academic and leadership performance.

NUS Graduate Scholarship for ASEAN Nationals 2017-2018

- Full masters scholarship that is non-binding, financed by the People of Singapore and the University that is awarded on a competitive basis.

International Mathematical Olympiad (IMO) Bronze Medalist 2012, 2013

Epsilon Fund Award, *HKUST Mathematics Department* 2017

- The Epsilon Fund Award is established with donations from faculty to honor mathematics students, who excel in mathematical scholarship and research.

Google Women Techmakers Scholarship; *Asia Pacific* 2016

- Given to a group of female undergraduate and graduate students from around Asia Pacific, who are awarded based on academic background and demonstrated leadership.
- Sponsored to Google I/O 2017 in Mountain View, California last May 2017.

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Talent Development Scholarship, HKSAR Government Scholarship Fund 2016
Lee Hysan Foundation Exchange Scholarship 2016
Philippine Mathematical Olympiad 1st runner-up 2012, 2013
Raffles Mathematical Olympiad, *Silver Medalist,* Singapore 2012

Services

Reviewer: ICCV 2021, BMVC 2020/2021, TVCG 2021

Volunteer Competitive Math Trainor **Philippines**
Trained the PH IMO Team ’17-’20; PH team leader for various elementary Math Olympiads

Projects

Interpretable & Actionable Models using Attribute & Uncertainty Information Autumn 2019

- CS229 (Machine Learning) course project
- Deep-learning models can be difficult to understand and control intuitively due to the black-box nature of these models. However, such lack of interpretability and human actionability in the models’ decision processes make it difficult to trust these models in critical applications that affect the lives of people. We propose to alleviate these problems through the use of attribute and uncertainty models in deep networks.

Master’s Thesis Aug 2017–May 2018

- Posed the problem of place recognition as a point cloud retrieval problem using deep learning, leveraging on illumination and seasonal invariance of point clouds which is a known problem in image-based place recognition. (CVPR 2018 accepted paper)

Bachelor’s Thesis (Underwater Robotics Vision) Jul 2016–May 2017

- Advised by Prof. Chi-Keung Tang
- Studied the performance of real-time object detection models, both using handcrafted features and deep learning networks, for underwater diver detection in robotics applications.

Smart Shirt & Smart App Oct-Nov 2015

- **First Runner-Up-** The Hong Kong Designathon 2015
- Developed a prototype of a smart shirt to detect human posture connected to an Android app.

HKUST Robotics Team, Remotely Operated Vehicle (ROV) Sub team
Software Engineer Dec 2014- Dec 2015

- **Overall 3rd Place** (Explorer Class) – 14th Annual MATE International Underwater Robotics Competition in *St John’s, Newfoundland and Labrador, Canada*
- **Asia Champion** in 2015 MATE Asia Regional Underwater Robotics Competition
- Built the main control software of the ROV and Qt GUI’s for the competition runs.
- The team was composed of 15 engineers who built and designed the ROV from scratch

Technical Skills

Python, C/C++, Unix, Tensorflow, Pytorch, MATLAB, OpenCV, ROS, microcontroller programming

Sports

HKUST Women’s Football Team Member; Frisbee; Scuba Diving

Languages

Native: English, Filipino, Hokkien; **Proficient**: Mandarin; **Basic**: Cantonese, German