Tzu-Chan (Alice) Chuang

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EMPLOYMENT

Lyft Level 5, Autonomous-Driving Division Mar 2019–Present

Software Engineer, Planning – Prediction team (C++, Python) Jan 2020–Present, Palo Alto, CA

- Predicted behaviors of yielding non-AV agents (i.e. other active agents such as cyclists and vehicles) with respect to the autonomous vehicles (AVs).
- Owner of mass rewrite of prediction codebase in order to simplify and integrate pipelines with Planning.
  - Drove a comprehensive test suite to verify the quality of the changes
  - Affected features include obstacle lane association, parking attributes, yields, etc.

Software Engineer (Computer Vision), Mapping team (Python, Pytorch, C++) Mar 2019–Dec 2019, Palo Alto, CA

- Lead for creating the Generic Dynamic Object 3D-Placement Pipeline.
  - Used to automatically extract dynamic objects (e.g. construction zones) from raw image and lidar data onto an arbitrary high-definition AV map.
  - Designed and delivered the end-to-end system from scratch to usable results.
  - Collaborated as a multi-team effort across Munich and London Mapping, Perception and Curation.
- Created labeling workflow and analyze dataset to build ML models. Designed specific procedures and expectations from manual labeling by the Curation team.
- Leveraged deep learning along with traditional computer vision approaches for solving object detection and classification problems in order to add critical mapping features.

Lyft Level 5, Autonomous-Driving Division May 2018–Aug 2018

Software Engineering Intern, Mapping team (Python, Tensorflow, Pytorch) Palo Alto, CA

- Implemented deep learning methods to improve traffic sign detection, by nearly 20% in accuracy.
- Built an active learning workflow for object detection tasks which reduced 90% of labeled data required to build the HD map for the autonomous vehicles.

Full-time Research Assistant Sep 2016–Jul 2017

Computer Vision Lab, National Tsing Hua University Hsinchu, Taiwan

- Developed an advanced algorithm of iris segmentation; 5% accuracy gain over the original approach.
- Devised an iris segmentation model based on iterative Fully Convolutional Networks [2].

Student Research Assistant Aug 2015–Apr 2016

Machine Vision and Learning Lab, National Chung Cheng University Chiayi, Taiwan

- Proposed a sparse coding based image classification approach in a hierarchical structure by learning class-specific and shared dictionaries which exploit the visual correlation within multiple object categories.
- Designed a discrimination algorithm which considers multiple dictionary learning layers [1].

EDUCATION

Columbia University in the City of New York Sep 2017–Dec 2018

M.S. in Computer Science (Computer Vision Track) New York, NY

National Tsing Hua University Sep 2012–Jun 2016

B.S. in Computer Science Hsinchu, Taiwan

PUBLICATIONS

[1] ***Tzu-Chan Chuang***, Chen-Kuo Chiang and Shang-Hong Lai, "Hierarchical Structured Dictionary Learning for Image Categories", accepted by IEEE ICASSP, 2017

[2] Yuzheng Xu, ***Tzu-Chan Chuang*** and Shang-Hong Lai, "Deep neural networks for accurate iris recognition", accepted by Asian Conference on Pattern Recognition (ACPR), 2017

TECHNICAL SKILLS

Programming Languages: Python, C++

Tools and Technologies: Tensorflow, Pytorch, Linux, Git, AWS