

YUJIA CHEN

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PROFESSIONAL EXPERIENCE

Google Seattle, WA
Google Research, Software Engineer - Machine Learning 06/2022 – now

- Designing, developing and deploying on-device computer vision models.

Amazon Seattle, WA
Prime Video (PV), Applied Scientist 06/2021 – 05/2022

- Designing and developing algorithms for video scene understanding served for various business goals.
- Working closely with stakeholders and PMs to optimize business goals.
- Leading, designing and building an internal research dataset across different projects and teams.
- Developed and deployed models for the video compliance system.
- Analyzed and designed algorithms for class-imbalance problems in classification and object detection.

Amazon Go, Applied Scientist 01/2020 - 06/2021

- Developed and deployed visual counting algorithms for Just-Walk-Out Amazon Fresh stores that have been launched in the Seattle area.
- Worked with the engineer team to maintain and update models in production.
- Designed and implemented activity modeling algorithms for various product types.
- Built and maintained internal large-scale database.
- Managed the workflow across the teams and provided supports on data and modeling.
- Collaborated with full stack engineers and associates on data collection sessions.

Amazon Go, Applied Scientist Intern 05/2019 - 08/2019

- Designed and implemented a multi-customer activity detection model with MXnet from scratch that achieved state-of-the-art results on MPII cooking2 dataset.
- Prepared and converted coordinates for the internal data from different camera views and coordinate systems.

Chinese Academy of Sciences, Institute of Automation Beijing, China
Research Intern 05/2017 - 06/2018

- Designed an occluded face detector with adversarial training methods with Caffe that outperformed state-of-the-art results by over 10% on occluded face detection benchmarks.
- Created an SOTA face detection system which was applied in the research teams in CASIA.
- Collaborated with researchers/scientists and managers on model development.

Laboratory of IoT&Robotics at USTB Beijing, China
Research Assistant 09/2016 - 04/2017

- Developed a grouped-merging feature extractor with model compression methods using Pytorch and achieved state-of-the-art results while reducing the model parameters to less than 1M.
- Prototyped a low-resolution object detector on the TX2 platform.

Oracle China Beijing, China
Intern-Software Development Division 04/2016 - 06/2016

- Participated in enterprise database management and debugging, including data management and analysis.

PUBLICATION

- *Yujia, C; Lingxiao, S; He, R; Yibo, H. 2018. Adversarial Occlusion-aware Face Detection*

- *The 9th IEEE International Conference on Biometrics: Theory, Applications, and Systems (BTAS 2018) (Oral)*
- **Keywords:** learnable adversarial mask, adversarial loss, face detection, occlusion segmentation.
- **Yujia, C; Li, C. 2017. GM-Net: Learning Features with More Efficiency**
 - *The 4th Asian Conference on Pattern Recognition (ACPR 2017) (Oral)*
 - **Keywords:** grouped convolution, feature merging, model compression, skip connection.

SELECTED PROJECTS

Chest X-ray Abnormalities Detection Seattle, WA
Kaggle Competition Spring 2021

- Developed a chest **X-ray abnormality localization model** based on Yolov5 and a classification model based on EfficientNet, proposed a merging strategy as strong post-processing method. Ranked **top 5%** among more than 800 teams in the first round.

Self-supervised Representation Learning for Deformable Objects Pittsburgh, PA
Carnegie Mellon University, supervised by prof. David Held Winter 2019

- Collected a dataset for robot cloth folding and developed an unsupervised model for **scene flow estimation** based on SuperPoint that achieved SOTA results.

Deep Slope Estimation with Formal Verification Pittsburgh, PA
Carnegie Mellon University, supervised by prof. David Held Fall 2019

- Developed a model to estimate the normals of a given real-world point cloud from a velodyne, and **compressed 90% of the parameters** while keeping the best performance.

The Application of Image Caption for the Blind - Tell Me Eye Smart Glasses Beijing, China
University of Science and Technology Beijing Spring 2017

- Developed algorithms and **prototyped a wearable device** named Tell Me Eye Smart Glasses that is capable of converting images to audio through an image caption model and transmitted data with a raspberry pi using WIFI connection.

EDUCATION

Carnegie Mellon University – School of Computer Science GPA 4.03/4.33 Pittsburgh, PA
Master of Science in Computer Vision 08/2018 - 12/2019

University of Science and Technology Beijing (USTB) GPA 3.83/4.0 Beijing, China
Bachelor of Science in Computer Engineering - Internet of Things 09/2014 - 06/2018

SKILLS

Coding: Python, C/C++, Unix Shell, SQL, Matlab, Java, HTML

Toolkits: Pytorch, Tensorflow, MXnet, Caffe, Keras, sklearn, opencv, MySQL, Git.