

# YUJIA CHEN

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## PROFESSIONAL EXPERIENCE

### Google

Seattle, WA

*Google Research, Senior 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

- Designed algorithms for video scene understanding served for various business goals.
- Led and built an internal research dataset across different projects and teams.
- Developed and deployed models for the video compliance system, focusing on class-imbalance problems and detection

*Amazon Go, Applied Scientist*

01/2020 - 06/2021

- Developed and deployed visual counting algorithms for Just-Walk-Out Amazon Fresh stores that launched across the united states.
- Designed and implemented activity modeling algorithms for various in-store product types.
- Managed the workflow across the teams on large-scale data collection and deployment.

*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.

### 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.

### 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*

04/2016 - 07/2016

- Engaged in enterprise-level database management and analysis.

## PUBLICATION

- Lan, W; Yujia, C; Wen-Sheng, C; Vishnu, B; Du, T; 2024. **SEAL: Semantic Attention Learning for Long Video Representation.**
- Ziqian, L; Yaojie, L; Runze, L; Yujia, C; Yixuan, L; Wen-Sheng, C; 2024. **OOD Learner via In-Context Learning**

- Litu, R; **Yujia, C**; Nataniel, R; Constantine, C; Sanjay, S; Wen-Sheng, C; 2024. **Semantic Image Inversion and Editing using Stochastic Rectified Differential Equations**
- Litu, R; **Yujia, C**; Nataniel, R; Constantine, C; Sanjay, S; Wen-Sheng, C; 2024. **RB-Modulation: Training-Free Personalization of Diffusion Models using Stochastic Optimal Control**
- Litu, R; **Yujia, C**; Abhishek, K; Constantine, C; Sanjay, S; Wen-Sheng, C; 2024 **Beyond First-order Tweedie: Solving Inverse Problems using Latent Diffusion**
  - The IEEE/CVF Conference on Computer Vision and Pattern Recognition 2024 (CVPR 2024)
- **Yujia, C**; Lingxiao, S; Ran, H; Yibo, H. 2018. **Adversarial Occlusion-aware Face Detection**
  - The 9th IEEE International Conference on Biometrics: Theory, Applications, and Systems (BTAS 2018) **(Oral)**
- **Yujia, C**; Li, C. 2017. **GM-Net: Learning Features with More Efficiency**
  - The 4th Asian Conference on Pattern Recognition (ACPR 2017) **(Oral)**

## SELECTED PROJECTS

### **Chest X-ray Abnormalities Detection**

Seattle, WA

*Kaggle-single participant*

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.

## 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.