

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

- 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

- Litu, R; **Yujia, C**; Nataniel, R; Constantine, C; Sanjay, S; Wen-Sheng, C; 2024. **Semantic Image Inversion and Editing using Stochastic Rectified Differential Equations**

- Submitted to ICLR 2025.
- 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**
 - Submitted to ICLR 2025.
- 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)**
 - **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.