Youpeng Zhao

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Education

Georgia Institute of Technology — Atlanta, GA
M.Sc. in Electrical and Computer Engineering, GPA:3.83/4.0 — 08/2018 – 05/2020

Wuhan University — Wuhan, China
B.Eng. in Automation, GPA:3.6/4.0 (Top 10%) — 09/2014 – 06/2018

Research Experience

Samsung Research China — Beijing, China
Research Staff, Vision Computing Lab — 03/2014 - Present

- Worked in the neural architecture search (NAS) team to develop efficient search and evaluation methods for vision tasks.
- Implemented an activation-based metrics to shrink search space and to improve current NAS methods.
- Participated in CVPR 2021 NAS Workshop Competition with the proposed method, which successfully reduced total training time by around 30%.

Institute of Automation, Chinese Academy of Sciences — Beijing, China
Research Assistant, National Laboratory of Pattern Recognition — 08/2020 – 03/2021

- Researched on deep learning methods for biomedical imaging in the Computational Biology & Machine Intelligence (CBMI) lab and supervised by Prof. Ge Yang.
- Improved detection and segmentation performance for electron microscopy (EM) images.
- Proposed a semi-supervised learning segmentation network using spatial continuity for mitochondria, and the network required less than 20% annotation and achieved competitive performance against current SOTA methods. Paper submitted to ISBI 2022.

Georgia Institute of Technology — Atlanta, GA
Graduate Research Assistant, Machine Learning Center — 03/2019 – 12/2019

- Researched on the intersection of machine learning and control theory, aiming to find theoretical explanations for deep learning from control theory, advised by Prof. Yongxin Chen.
- Analyzed theoretical convergence of integral quadratic constraints (IQC) for min-max problem under linear semi-definite settings and disentanglement analysis for generative models. Produced a research report on dynamical systems for variational autoencoders.

Additional Projects

Camera Self-calibration via Probabilistic Modelling | *Python* — 06/2021 - Present

- Developed a probabilistic inference (PI) model for camera self-calibration under circular motion.
- Performed a numerical convergence study to analyze probability-based energy function
- Evaluated PI model on different datasets and achieved better performance against current SOTA methods.

Technical Skills

Programming: C, Python, PyTorch, TensorFlow, CSS/HTML
Software: MATLAB, OpenCV, GitHub, Adobe Photoshop/Illustrated/Premiere
Languages: English (professional), Chinese (native)

Activities & Honors

Winner of CVPR 2021 NAS Competition Track 3: Unseen Data Track (2021)
Analyst, Member: Georgia Tech Rainbow Six Esports Team (2018-2020)
Teaching Assistant: Wuhan University Modern Control Theory Course (2017-2018)
Zhangren Huang Scholarship, Wuhan University (2016)
Chinese National Scholarship, Wuhan University (2015)
Hobbies: Basketball, Marathon running, Video editing.