Hanlin Chen

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EDUCATION

Beihang University **Beijing, China**
Department of Aeronautics and Astronautics Engineering
Master of Science Control Engineering ***09/2018- 01/2021***

- Overall GPA: 90.1/100
- Relevant Courses: Digital Image Processing, Principles and Methods of Artificial Intelligence, Machine Learning Theory and its Application, Algorithm Design and Analysis, Fundamentals of Software Technology, Matrix Theory, Computational Intelligence

Shenyang Aerospace University **Shenyang, China**
Department of Aeronautics and Astronautics Engineering
Bachelor of Science Aircraft Design and Engineering ***09/2014- 07/2018***

- Relevant Courses: Advanced Mathematics, Linear Algebra, Probability Theory and Mathematical Statistics, C#

RESEARCH INTERESTS

- Neural Architecture Search (NAS)
- 3D Computer Vision

PUBLICATIONS

Hanlin Chen, Li'an Zhuo, Baochang Zhang, Xiawu Zheng, Jianzhuang Liu, Rongrong Ji, David Doermann, Guodong Guo, **Binarized Neural Architecture Search for Efficient Object Recognition, IJCV**, 2021.

Hanlin Chen, Baochang Zhang, Song Xue, Xuan Gong, Hong Liu, Rongrong Ji, David Doermann, **Anti-Bandit Neural Architecture Search for Model Defense, ECCV**, 2020.

Hanlin Chen, Li'an Zhuo, Baochang Zhang, Xiawu Zheng, Jianzhuang Liu, David Doermann, Rongrong Ji, **Binarized Neural Architecture Search**, **AAAI**, 2020.

Hanlin Chen, Xudong Zhang, et al. Efficient Facial Landmark Localization based on Binarized Neural Networks, **Efficient Facial Landmark Localization based on Binarized Neural Networks**, Electronics, 2020.

Song Xue†, **Hanlin Chen**†(co-first), Chunyu Xie, Baochang Zhang, Xuan Gong, David Doermann, **Fast and Unsupervised Neural Architecture Evolution for Visual Representation Learning**, IEEE Computational Intelligence Magazine, 2021.

Li'an Zhuo, Baochang Zhang, Linlin Yang, **Hanlin Chen**, Qixiang Ye, David Doermann, Rongrong Ji, Guodong Guo, **Cogradient Descent for Bilinear Optimization**, **CVPR**, 2020.

Li'an Zhuo, Baochang Zhang, **Hanlin Chen**, Linlin Yang, Chen Chen, Yanjun Zhu, David Doermann, **CP-NAS: Child-Parent Neural Achitecture Search for 1- bit CNNs**, **IJCAI**, 2020.

Sheng Xu, **Hanlin Chen**, Kexin Liu, Jinhu Lii, Baochang Zhang, **Efficient Block Pruning based on kernel and feature stabilization**, **Neural Computing and Applications**, 2020.

Sheng Xu, **Hanlin Chen**, Kexin Liu, Jinhu Lii, Baochang Zhang, **Efficient Block Pruning based on kernel and feature stabilization, Proceedings of the Digital Image Computing: Techniques and Applications**, 2019.

Chunlei Liu, Wenrui Ding, Yu Hu, **Hanlin Chen**, Baochang Zhang, Shuo Liu, **Guided Convolutional Network**, **Proceedings of the International Conference on Distributed Smart Cameras**, 2019.

RESEARCH EXPERIENCES

The Baochang Zhang's Group (Beihang University) Beijing, China

The research group of Prof. Baohang Zhang from Beihang University, working on computer vision, especially in model compression and neural architecture search.

Graduate Research Assistant, Advisor: Prof. Baochang Zhang ***06/2019- present***

- **Project: Efficient Neural Architecture Search (NAS) Project**
  - To address the learning inefficiency caused by binarized neural architecture optimization requirements and the huge architecture space, introduced channel sampling and operation space reduction into a differentiable NAS and hence proposed a performance-based strategy used to abandon fewer potential operations.
  - Introduced the Upper Confidence Bound (UCB) to solve 1-bit binarized neural architecture search (BNAS) which was more difficult to optime than BNAS.
  - Used an anti-bandit algorithm based on a specific operation search strategy with a lower and an upper bound, which could learn a robust architecture based on a comprehensive operation space.

Machine Intelligence, Vision Lab (Alibaba DAMO Academy) Beijing, China

The Vision Lab is dedicated to the development of computer vision technologies, which can perceive, understand, produce, and process image and video content, and generate and reconstruct 3D scenes and objects. The Vision Lab provides technical support for services and applications that use videos and images to help customers identify business opportunities in a wide array of industries, such as: new retail, new media, and new manufacturing. These services and applications have been widely used in the interactive entertainment, digital intelligence education, and offline intelligence sectors.

Computer Vision Algorithm Engineer, Advisor: Dr. Ming Lin ***03/2021- present***

- **Project: Detection and Recognition of License Plates**
  - Applied Yolov5, CenterNet and DenseNet to detect cars, detected and recognized license plates respectively.
- **Project: Neural Architecture Search (NAS)**
  - Analyzing zero-shot estimators on NAS and building a new benchmark on NAS, which is submitted to ICLR.
  - Trying to design deep neural networks for microcontroller unit based on NAS.
- **Project: Power Inspection**
  - Trying to apply 3D segmentation into power inspection.

Computer Vision Algorithm Intern, Advisor: Dr. Ming Lin ***06/2020- 09/2020***

- **Project: Testing and Prediction Latencies for Neural Architecture Project**
  - Tested latencies of different architectures and built a latency dataset. On top of that, used the dataset to train a regression model to predict latencies.

SKILLS

- **Programming Languages:** Proficient in Python Language, C/C++.
- **Technologies and Frameworks:** Pytorch, Tensorflow, Linux.

HONORS&AWARDS

- Excellent Graduation Thesis in Beihang University ***2021***
- Excellent Graduate in Beihang University ***2021***
- The Second Academic scholarship in Beihang University ***2020***
- National Scholarship in China ***2020***
- Merit Student in Beihang University ***2019-2020***
- The Second Academic scholarship in Beihang University ***2019***
- The First Academic scholarship in Beihang University ***2018***
- The Third Prize Scholarship in Shenyang Aerospace University ***04/2015, 04/2017***
- Liaoning Provincial Government Scholarship ***12/2016***
- The First Prize Scholarship in Shenyang Aerospace University ***09/2015, 04/2016, 10/2016***