

# Shen Yan

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## Highlights

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My research centers on unsupervised learning and AutoML. This fits well with a nascent and fast-evolving research field referred to as **Neural Architecture Search**, which aims to automate deep learning model design and reduce the cost of manually designed deep learning models across different use cases. My work covers the entire spectrum of research in this domain: from building efficient optimization algorithms to search specialized neural network on cheap mobile devices, to understand architecture encodings and its clustering effect through theoretical analysis and empirical evaluations.

## Education

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<b>Michigan State University</b> , East Lansing, USA Ph.D., Computer Science, 3.8/4.0	Jan 2019 - now
<b>RWTH Aachen University</b> , Aachen, Germany M.S., Computer Engineering, 1.2/5.0 ( <i>excellent</i> )	Oct 2018
<b>Xidian University</b> , Xi'an, China B.S., Electrical Engineering, 3.82/4.0	July 2015

## Award

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Top Reviewers of ICML '20	Sep 2020
4th Place Winner of NeurIPS '19 Google MicroNet Challenge	Nov 2019
ICCV '19 Neural Architects Workshop Best Paper Award Nominee	Oct 2019
MSU Graduate Office Fellowship (GOF)	Jan 2019
World Finalist, Kaggle Data Science Game, Paris	Sep 2016
Summer School Exchange Student, Tsinghua University	Aug 2015
Meritorious Winner, International Mathematical Contest In Modeling (MCM)	May 2014
First Prize Scholarship, Xidian University	Sep 2012, 2013

## Professional Experiences

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<b>Applied Machine Learning Intern</b> TikTok, Mountain View, USA	June 2020 - Sep 2020
<b>Research Intern</b> Bosch Research, Sunnyvale, USA	May 2019 - Aug 2019
<b>Research Intern</b> eBay Research, Aachen, Germany	Apr 2017 - Aug 2017
<b>Software Engineering Intern</b> Nuance Communications, Aachen, Germany	Aug 2016 - Oct 2016
<b>Teaching Assistant</b> RWTH Aachen University, Aachen, Germany	Oct 2015 - Feb 2016

## Publications

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- [8] **Shen Yan**, Yu Zheng, Wei Ao, Xiao Zeng, Mi Zhang. “Does Unsupervised Architecture Representation Learning Help Neural Architecture Search?”. In *Conference on Neural Information Processing Systems (NeurIPS’ 20)*, Online, Dec 2020.
- [7] Taojiannan Yang, Sijie Zhu, **Shen Yan**, Mi Zhang, Andrew Willis, Chen Chen. “MutualNet: Adaptive ConvNet via Mutual Learning from Network Width and Resolution”. In *European Conference on Computer Vision (ECCV ’20)*, Online, Aug 2020. **[Oral Presentation]**
- [6] **Shen Yan**, Huan Song, Nanxiang Li, Lincan Zou, Liu Ren. “Improve Unsupervised Domain Adaptation with Mixup Training”. In *arXiv:2001.00677.*, Cornell University Library, January 2020.
- [5] Abin Jose\*, **Shen Yan\***, Mi Zhang, Jens-Rainer Ohm. “Deep Subclass Linear Discriminant Analysis for Multimodal Feature Space Learning”. In the Proceedings of *IEEE International Conference on Image Processing (ICIP ’20)*, Online, October 2020.
- [4] **Shen Yan**, Biyi Fang, Faen Zhang, Yu Zheng, Xiao Zeng, Hui Xu, Mi Zhang. “HM-NAS: Efficient Neural Architecture Search via Hierarchical Masking”. In the Proceedings of *IEEE International Conference on Computer Vision (ICCV ’19) Neural Architects Workshop*, Seoul, Korea, October 2019. **[Best Paper Award Nominee]**
- [3] **Shen Yan**, Leonard Dahlmann, Pavel Petrushkov, Sanjika Hewavitharana, Shahram Khadivi. “Word-based Domain Adaptation for Neural Machine Translation”. In the Proceedings of *The International Workshop on Spoken Language Translation (IWSLT ’18)*, Bruges, Belgium, October 2018. **[Oral Presentation]**
- [2] Abin Jose, **Shen Yan**, Iris Heisterklaus. “Binary Hashing Using Siamese Neural Networks”. In the Proceedings of *IEEE International Conference on Image Processing (ICIP ’17)*, Beijing, China, September 2017.
- [1] Harald Hanselmann, **Shen Yan**, Hermann Ney. “Deep Fisher Faces”. In the Proceedings of *The British Machine Vision Conference (BMVC ’17)*, London, UK, September 2017.

## Patents

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- [1] ”Systems And Methods For Implementing Flexible, Content-adaptive Deep Learning Neural Networks”. U.S. Provisional Application
- [2] ”System And Method on Improving Unsupervised Domain Adaptation with Mixup Training”. U.S. Provisional Application

## Selected Media Coverage

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MSU Today [[Science & Technology](#)]. “MSU Team focused on AI earns recognition at Google MicroNet Challenge” Jan 2020

JiQiZhiXin. “ICCV Workshop Best Paper Nominee: Efficient Neural Architecture Search via Hierarchical Masking” Oct 2019

## Professional Services

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### Journal Reviewer

Neurocomputing 2020

### Conference Reviewer

ICML 2020, NeurIPS 2020, ICLR 2021, CVPR 2021

## Skills

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### Programming Language

Python, Go, C/C++, Perl, Lua, Bash/Shell, Make, HTML.

### Language

English, German, Chinese.

### Frameworks

NumPy, Pandas, Tensorflow, PyTorch, SciPy, Caffe, Moses, OpenCV, Scikit-Learn, OpenGL, Git.

### Systems

Linux, OSX.