LU YIN

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Google Scholar: https://scholar.google.com/citations?user=G4Xe1NkAAAAJ

ABOUT ME

ello, I'm Lu, an Assistant Professor at the University of Surrey, a long-term visitor and collaborator with the Visual Informatics Group (VITA) at UT Austin, and a visiting researcher at Eindhoven University of Technology (TU/e). My primary research focuses on understanding and building AI models with Efficiency and Scalability. I believe that passion and persistence are the cornerstones of transformative research, and I am committed to producing work of the highest caliber.

RESEARCH INTERESTS

AI Efficiency # Large Foundation Models # Generative AI # Interdisciplinary AI Applications
(e.g. Geoscience and Healthcare)

PROFESSIONAL EXPERIENCE

University of Surrey
06/2024 – Present

Assistant Professor

- School of Computer Science and Electronic Engineering
  Nature Inspired Computing and Engineering Group

Eindhoven University of Technology
07/2023 – 12/2023

Postdoctoral Researcher

- Department of Mathematics and Computer Science
  Data and AI cluster

Google, New York Office
07/2023 – 09/2023

AI Researcher (Intern)

- Build Efficient Large Language Models (LLM)

EDUCATION

Eindhoven University of Technology
10/2018 - 2/2023

Ph.D in Computer Science

Department: Mathematics and Computer Science
Specialization: Knowledge Elicitation, Data Efficiency, Model Efficiency
Promotors: Prof. Dr. Mykola Pechenizkiy; Dr. Vlado Menkovski

Harbin Institute of Technology
(Shenzhen)
09/2015 - 07/2018

Master in Control Engineering

Department: Mechanical Engineering and Automation
Specialization: Machine Learning, Robotics
Promotors: Prof. Dr.Xiaorui Zhu

Harbin Institute of Technology
09/2009 - 07/2013

Bachelor in Electrical Engineering and Automation

Department: Information and Electrical Engineering

AWARDS AND HONOURS

- 12/2022 Best Paper Award at Learning on Graphs Conference (LoG). 2022.
- 06/2017 Best Paper Nomination Award at International Conference on Computer Vision Systems (ICVS), 2017

GRANT

NWO Grants for Computing Time

- Funding Body: The Dutch Research Council (NWO)
- Value of Award: 90,431.5 $
- Duration: April 2023 - April 2025
- Role on the Grant: Co-pi (with Mykola Pechenizkiy and Shiwei Liu)

NWO Grants for Computing Time

- 2022 EINF-2694： HPC Cloud (CPU): 50.000 hr，HPC Cloud (GPU： NVIDIA GeForce RTX 2080 Ti): 10,000 hr
- 2022 EINF-2943： NVIDIA A100，1,000,000 Credits (7,812 hr)
- 2023 EINF-5205： HPC Cloud (GPU： NVIDIA GeForce RTX 2080 Ti): 10,000 hr
- 2023 EINF-5206： NVIDIA A100，1,000,000 Credits (7,812 hr)

SUPERVISION ACTIVITIES

Ph.D Projects

- 2024, Robustness of Large Foundation Models - Kappiyath Adarsh, University of Surrey,
- 2024, Resource Efficient 3D World Understanding - Thengane Vishal, University of Surrey,
- 2024, Efficient LLM - Jiaxi Li, University of Surrey （Co-supervising with Dr. Xilu Wang）
- 2024, Model Compression - Andi Li, University of Aberdeen, （Co-supervising with Prof. Georgios Leontidis）

MSc Projects

- 2022, Automated Object Recognition in Aerial Photographs -Judith te Selle, TU/e
- 2022, Aspect-based Few-shot Learning -Phuong Trinh, TU/e

BSc Projects

- 2024, Sparse Training with Dynamic Sparsity - Roche Saul, University of Surrey
- 2024, Reliable Music Generation - Davison Ben, University of Surrey

TEACHINGS

- Deep Learning (2AMM10) as TA, Eindhoven University of Technology 2020
- Deep Learning (2AMM10) as TA, Eindhoven University of Technology 2021
- Deep Learning (2AMM10) as TA, Eindhoven University of Technology 2023
- Practical Business Analytics (Com3018), University of Surrey 2024
- Deep Learning and Advanced AI (COM3025), University of Surrey 2025

SERVICE

- 2025 : Conference Reviewer: CPAL, ICLR, CVPR
- 2024: Conference Reviewer: NeurIPS, DAC, UAI, ICML, CPAL
  Journal Reviewer: ACM Computing Surveys
- 2023 : Conference Reviewer: NeurIPS, UAI, ICLR SNN(workshop)
  Journal Reviewer: Clinical Epidemiology
- 2022: Conference Reviewer: SNN
- 2020: Conference Reviewer: ECML-PKDD

TALKS ORGANIZATIONAL CONTRIBUTION

- 2024: The power of model sparsity, Multimedia Analytics (MA) Laboratory at City University of Hong Kong
- 2023: LLM pruning, Visual Informatics Group @ University of Texas at Austin,
  Meta universe and Digital Human @ AI time PhD Debate, Tsinghua
- 2022: Model/supervision Efficiency at Xu Lab, Carnegie Mellon University,
- 2020: Going beyond training ML models with labels at EDGE AI, Eindhoven University of Technology,

ORGANIZATIONAL CONTRIBUTION

- NeurIPS 2024 Challenge： Edge-Device Large Language Model Competition
- IEEE CAI 2025 Workshop：Stable Training Paradigms for LLMs: Reducing Instability, Increasing Capacity
- IEEE CAI 2025 Workshop：Secure, Private, and Fair Federated Optimization and Learning

RESEARCH & SELECTED PUBLICATION

Overall: (as of December 2024)

- **over 40** papers (12 **A*** and 5 **A** top AI conference papers, CORE Conference Ranking), 1 Jornal Paper

Highlights:

- 1 **Best Paper Award,** 1 **Best Paper Nomination Award.**
- 5 **ICML**, 3**Neurips**, 2 **EMNLP**, 1 **BMVC**, 1 **ICASSP**, 1 **ICLR**, 1 **AAAI**, 1 **UAI.**

Selected Publications

- **Lu Yin**, You Wu, .etc. *Outlier Weighed Layerwise Sparsity (OWL): A Missing Secret Sauce for Pruning LLMs to High Sparsity*. The Forty-first International Conference on Machine Learning (**ICML**), 2024
- **Lu Yin**, Ajay Jaiswal, .etc. *Pruning Small Pre-Trained Weights Irreversibly and Monotonically Impairs "Difficult" Downstream Tasks in LLMs*. The Forty-first International Conference on Machine Learning (**ICML**), 2024
- Tianjin Huang, **Lu Yin**, Zhenyu Zhang, Li Shen, Meng Fang, Mykola Pechenizkiy, Zhangyang Wang, Shiwei Liu. Are Large Kernels Better Teachers than Transformers for ConvNets? International Conference on Machine Learning (ICML), 2023.
- **Lu Yin,** Gen Li, Meng Fang, Li Shen, Tianjin Huang, Zhangyang Wang, Vlado Menkovski, Xiaolong Ma, Mykola Pechenizkiy, Shiwei Liu. *Dynamic Sparse Training Is also A Structure Sparsity Learner.* Conference on Neural Information Processing Systems (**NeurIPS**), 2023
- **Lu Yin**, Shiwei Liu, Fang Meng, Tianjin Huang, Vlado Menkovski, Mykola Pechenizkiy. *Lottery Pools: Winning More by Interpolating Tickets without Increasing Training or Inference Cost*. Thirty-Seventh AAAI Conference on Artificial Intelligence (**AAAI**), 2023.
- **Lu Yin**, Vlado Menkovski,Meng Fang, Tianjin,Huang, Yulong Pei,Mykola Pechenizkiy, Decebal Constantin Mocanu, Shiwei Liu. *Superposing Many Tickets into One: A Performance Booster for Sparse Neural Network Training.* The 38th Conference on Uncertainty in Artificial Intelligence (**UAI**). 2022.

- Jie Ji, Gen Li, **Lu Yin**, .etc. BiDST: *Dynamic Sparse Training is a Bi-Level Optimization Problem.* The Forty-first International Conference on Machine Learning (**ICML**), 2024

- Shiwei Liu, **Lu Yin**, Decebal Constantin Mocanu, and Mykola Pechenizkiy. *Do We Actually Need Dense Over-Parameterization? In-Time Over-Parameterization in Sparse Training*. The Thirty-eighth International Conference on Machine Learning (**ICML**), PMLR, 2021.

- Qiao Xiao, Boqian Wu, **Lu Yin,** Christopher Neil Gadzinski, Tianjin Huang, Mykola Pechenizkiy, Decebal Constantin Mocanu. *Are Sparse Neural Networks Better Hard Sample Learners?* Conference on British Machine Vision Conference. (**BMVC**), 2024

- Adriana Fernandez-Lopez, Shiwei Liu, **Lu Yin**, Stavros Petridis, Maja Pantic, *Full-Rank No More: Low-Rank Weight Training for Modern Speech Recognition Models.* IEEE International Conference on Acoustics, Speech, and Signal Processing. (**ICASSP**), 2025

- Boqian Wu, Qiao Xiao, Shiwei Liu, **Lu Yin,** etc. *E2ENet: Dynamic Sparse Feature Fusion for Accurate and Efficient 3D Medical Image Segmentation.* Conference on Neural Information Processing Systems (**NeurIPS**), 2024

- AJAY KUMAR JAISWAL, **Lu Yin.** etc, *FFN-SkipLLM: A Hidden Gem for Autoregressive Decoding with Adaptive Feed Forward Skipping,* Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2024

- Abhinav Bandari, **Lu Yin.** etc, *FFN-SkipLLM: Is C4 Dataset Enough for Pruning? An Investigation of Calibration Data for LLM Pruning,* Conference on Empirical Methods in Natural Language Processing (**EMNLP**), 2024

- Gen Li, **Lu Yin**, Jie Ji, Wei Niu, Minghai Qin, Bin Ren, Linke Guo, Shiwei Liu, Xiaolong Ma *NeurRev: Train Better Sparse Neural Network Practically via Neuron Revitalization.* The Twelfth International Conference on Learning Representations. (**ICLR**) 2024

- Shiwei Liu, Tianlong Chen, Xiaohan Chen, Zahra Atashgahi, **Lu Yin**, Huanyu Kou, Li Shen, Mykola Pechenizkiy, Zhangyang Wang, and Decebal Constantin Mocanu. *Sparse Training via Boosting Pruning Plasticity with Neuroregeneration.* The Thirty-fifth Conference on Neural Information Processing Systems (**NeurIPS**), 2021

- Zahra Atashgahi, Xuhao Zhang, Neil Kichler, Shiwei Liu, **Lu Yin**, Mykola Pechenizkiy, Raymond Veldhuis, Decebal Constantin Mocanu. *Supervised Feature Selection with Neuron Evolution in Sparse Neural Networks*. Transactions on Machine Learning Research (**TMLR**).

- Tianjin Huang, Tianlong Chen, Meng Fang, Vlado Menkovski, Jiaxu Zhao, **Lu Yin**, Yulong Pei, Decebal Constantin Mocanu, Zhangyang Wang, Mykola Pechenizkiy, Shiwei Liu. *You Can Have Better Graph Neural Networks by Not Training Weights at All: Finding Untrained GNNs Tickets*. Learning on Graphs Conference (**LoG**). 2022. (**BEST PAPER AWARD**)

- **Lu Yin**, Vlado Menkovski, Mykola Pechenizkiy. *Knowledge Elicitation using Deep Metric Learning and Psychometric Testing.* The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases **(ECML-PKDD)**, Ghent, Belgium, 2020.

- Jiaxu Zhao*, **Lu Yin***, Shiwei Liu, Fang Meng. Mykola Pechenizkiy. *REST: Debiasing Deep Neural Networks through Reweighted Sparse Training.* The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (**ECML-PKDD**). Turin, Italy, 2023. *equal contribution

- Tianjin Huang, Shiwei Liu, Tianlong Chen, Meng Fang, Li Shen, Vlado Menkovski, **Lu Yin,** Yulong Pei, Mykola Pechenizkiy. *Enhancing Adversarial Training via Reweighting Optimization Trajectory.* The European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases **(ECML-PKDD**). Turin, Italy, 2023.

- **Lu Yin**. *Beyond Labels: Knowledge Elicitation using Deep Metric Learning and Psychometric Testing.* 29th International Joint Conference on Artificial Intelligence-17th Pacific Rim International Conference on Artificial Intelligence (**IJCAI DC**), 2020. Doctoral Consortium.

- **Lu Yin**, Vlado Menkovski, Shiwei Liu, and Mykola Pechenizkiy. *Hierarchical Semantic Segmentation using Psychometric Learning*. The Thirteenth Asian Conference on Machine Learning (**ACML**), 2021. (**LONG ORAL**)

- **Lu Yin**, Vlado Menkovski, Yulong Pei, and Mykola Pechenizkiy. *Semantic-Based Few-Shot Learning by Interactive Psychometric Testing*. The Workshop on Interactive Machine Learning. The Thirty-Sixth AAAI Conference on Artificial Intelligence (**AAAI Workshop**), 2022

- **Lu Yin**, Vlado Menkovski, Yulong Pei, and Mykola Pechenizkiy. *Semantic-Based Few-Shot Learning by Psychometric Testing*. International Symposium on Intelligent Data Analysis (**IDA**). Springer, Cham, 2022.

- Fucheng Deng, Xiaorui Zhu, **Lu Yin**, Chao H, *Real-Time Detection of Polygons and Circles Based on Semantics*. 2018 IEEE International Conference on Information and Automation (**ICIA**). IEEE, 2018: 444-449.

- Xiaorui Zhu, **Lu Yin,** Fucheng Deng. *Wind Disturbance Rejection in Position Control of Unmanned Helicopter by Nonlinear Damping.* International Conference on Computer Vision Systems (**ICVS**). Springer, Cham, 2017: 590-599. (**BEST PAPER NOMINEES AWARD**)

More in: https://scholar.google.com/citations?user=G4Xe1NkAAAAJ