

Hao Tan

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PhD student | AI & Deep Learning | Available: July 2026

PROFESSIONAL SUMMARY

Ph.D. Candidate in Computer Science at the University of Leeds with expected graduation in **July 2026**, specializing in **Deep Learning Model Fusion** and **Multi-Task Learning**. His current research focuses on optimizing AI generalization and specialization through objective or parameter space fusion. Prior to his doctoral studies, he researched in **Neural Architecture Search** and evolutionary computation at SUSTech.

EDUCATION

University of Leeds, Leeds, UK

Doctor of Philosophy, School of Computer Science

Oct 2021 - present

- Supervisor: [Associate Professor Mohammad Nabi Omidvar](#), [Professor Netta Cohen](#)
- PhD Thesis: Fusion Strategies for Cascading, Merging, and Multi-Tasking Deep Models

Southern University of Science and Technology (SUSTech), Shenzhen, China

Bachelor of Engineering, Department of Computer Science and Engineering

Sep 2016 - Jun 2020

- Undergraduate Thesis: Neural Architecture Search Based on Differential Evolution

WORK EXPERIENCE

Research Assistant, Southern University of Science and Technology, China

Aug 2020 - July 2021

Research Grants:

- 2020-2022: Evolutionary Computation Based Deep Neural Architecture Search for Microchips, [Key Member](#), RMB 1,280,000, Huawei Hisilicon, China.
- 2020-2023: Cell-Based Deep Neural Networks Architecture Search Using Evolutionary Multiobjective Optimization, [Key Member](#), RMB 230,000, National Science Foundation, China.

Research Topics:

- Collaborated with Huawei to design lightweight neural architectures tailored for microchip hardware constraints.
- Implemented evolutionary algorithms in PyTorch to automate network architecture optimization, achieving SOTA performance.

Internship, Shenzhen Branch, Bank of China, China

Aug 2019

- Engineered automated RPA workflows using UIPath for the Shenzhen Branch, automating data entry in the system of international revenue and expenditure statistics by computers instead of manual operation.

PUBLICATIONS AND PATENTS

Journal Articles

1. "RelativeNAS: Relative Neural Architecture Search via Slow-Fast Learning"
[Hao Tan](#), Ran Cheng, Shihua Huang, Cheng He, Changxiao Qiu, Fan Yang, Ping Luo
IEEE Transactions on Neural Networks and Learning Systems (TNNLS), 2021.
2. "Efficient Evolutionary Neural Architecture Search by Modular Inheritable Crossover"
Cheng He, [Hao Tan](#), Shihua Huang, Ran Cheng
Swarm and Evolutionary Computation, 2021.

Conference Proceedings

1. "Efficient Evolutionary Neural Architecture Search by Modular Inheritable Crossover"
[Hao Tan](#), Cheng He, Dexuan Tang, Ran Cheng
International Conference on Bio-inspired Computing: Theories and Applications (BIC-TA), 2019.
Best Paper Award.

Manuscripts in Submission

1. “MIMA: Iterative Model Averaging and Fine-Tuning for Multi-Task Learning”
Hao Tan, Netta Cohen, Mohammad Nabi Omidvar
Under review, 2025.
2. “Rotation Effect: Swapping Weights of Fine-tuned Models Leads to Flatter Directions in Error Landscapes”
Hao Tan, Ran Cheng, Netta Cohen, Mohammad Nabi Omidvar
Under review, 2024.
3. “When Effective Routing Exploits Model-Discrepancy to Optimize Accuracy in Cascading Classification Models”
Hao Tan, Ran Cheng, Netta Cohen, Mohammad Nabi Omidvar
Under review, 2024.

Patents

1. “A Neural Architecture Search Method and System based on Evolutionary Learning”
Ran Cheng, Hao Tan, Cheng He, Zhanglu Hou, Changxiao Qiu
International Patent, PCT/CN2020/136950, filed June 23, 2022.

HONORS AND AWARDS

SUSTech - University of Leeds Studentship	2021
BIC-TA Best Paper Award	2019

PROFESSIONAL SERVICES

Conference Program Committee/Reviewer:

- AAI Conference on Artificial Intelligence
- Genetic and Evolutionary Computation Conference (GECCO)

Journal Reviewer:

- IEEE Transactions on Evolutionary Computation (TEVC)
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Cognitive and Developmental Systems (TCDS)
- IEEE Transactions on Emerging Topics in Computational Intelligence (TETCI)
- IEEE Transactions on Artificial Intelligence (TAI)
- ACM Transactions on Evolutionary Learning and Optimization (TELO)
- Complex & Intelligent Systems
- Applied Soft Computing

LANGUAGES AND SKILLS

- **Programming:** Python, JAVA, PyTorch, MATLAB.
- **Tools:** Git, Linux, Docker, LaTeX.
- **Languages:** Mandarin (Native), English (Professional).

REFERENCES

Dr. Nabi Omidvar

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Dr. Netta Cohen

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