

# Dongheng Lin

☎ (+1) 4479020436 | ✉ dl58@illinois.edu | 🏠 rathgrith.github.io/ | 🌐 Rathgrith | 🐦 @rath6406135287

## Education

### University of Illinois at Urbana Champaign

MENG COMPUTER ENGINEERING, GPA: 3.94/4.0

Illinois, United States

Aug. 2023 – Dec. 2024 (expected)

- **Selected Coursework:** CS 543 Computer Vision (A), CS410 Text Information System (A+), etc.

### University of Liverpool & Xi'an Jiaotong-Liverpool University

BSC INFORMATION AND COMPUTING SCIENCE, GPA WES GPA: 3.91/4.0, RANKED: 6/295

Liverpool, United Kingdom

Sep. 2019 – Jun. 2023

- **Honours:**

- Graduated with a First-Class distinction degree.
- 2022-2023 University Academic Excellence Award — *Scholarship Fund for top 5% students*

- **Qualifications:**

- GRE: 323/340 — Verbal: 157, Quantitative: 166
- IELTS Band Score 8 — Listening 8, Reading 8.5, Speaking 8, Writing 7

## Publications

### What Time Tells Us? Time-Aware Representation Learning from Static Images

- Dongheng Lin\*, Han Hu\*, Jianbo Jiao. "What Time Tells Us? Time-Aware Representation Learning from Static Images." *Under review*.

### SPSS: A Saliency-Based Poisoning Selection Strategy for Selecting Backdoor Attack Victims

- Zihan Lyu\*, Dongheng Lin\*, Shengkai Sun, Ruiming Zhang, Jie Zhang†. "SPSS: A Saliency-Based Poisoning Selection Strategy for Selecting Backdoor Attack." *2024 International Joint Conference on Neural Networks (IJCNN)*, Yokohama, Japan, 2024, pp. 1-9, doi: 10.1109/IJCNN60899.2024.10650242. Available at: <https://ieeexplore.ieee.org/document/10650242>.

### Novel Conditional Metadata Embedding Data Preprocessing Method

- Juntuo Wang<sup>1</sup>, Qiaochu Zhao<sup>1</sup>, Dongheng Lin<sup>1</sup>, Erick Purwanto<sup>1</sup>, Ka Lok Man<sup>2</sup>. "Novel Conditional Metadata Embedding Data Preprocessing Method." *2022 International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery (CyberC)*, Suzhou, China, 2022, pp. 303-311, doi: 10.1109/CyberC55534.2022.00057. Available at: <https://ieeexplore.ieee.org/document/10090205/>.

## Research Experiences

### The Mix Group, University of Birmingham

Remote

RESEARCH INTERN

Dec. 2023 - Present

- Worked under the supervision of Prof. Jianbo Jiao, with a focus on metadata-aware feature engineering and representation learning.
- Investigated various learning scheme, providing comprehensive analysis to the time-aware representations in natural images.
- Authored a rigorous research paper, serving as the principal author, responsible for the core idea, code implementation and manuscript writing.
- Submitted the outcome paper to a leading conference.

### Saliency-based Backdoor Attacks on Deep Neural Networks (DNNs)

Suzhou, China (Hybrid)

RESEARCH ASSISTANT (PROJECT LEAD)

Jun. 2023 - Dec. 2023

- Led the design and implementation of a data-efficient sample selection algorithm to optimize the backdoor learning process in DNNs.
- Prioritized traits like benign feature saliency and diversity, significantly reducing the number of poisoned samples required for a successful attack.
- Achieved a comparable attack success rate using only 38.44% of the typical number of poisoned samples, enhancing both efficiency and performance.

### Novel Convolutional Embeddings for Domain Adaptation in Medical Segmentation

Suzhou, China

RESEARCH ASSISTANT

Jun. 2022 - Oct. 2022

- Developed a novel model that incorporates metadata embeddings as additional input for Medical Semantic Segmentation across different domains.
- Applied Vahadane-based color normalization to construct a pseudo-class representing various domains of biopsy scans.
- Addressed the inconsistency of sample sources in medical image processing by introducing this method.
- Achieved a 26% improvement in mean Intersection over Union (mIOU) compared to the baseline model.

## Work Experience

### Wensi Haihui Information Technology Co., Ltd. (Pactera)

Wuxi, China

BACK-END INTERN (FULL-TIME)

Jun. 2021 - Sep. 2021

- Worked as a full-stack developer in a collaborative team, contributing to both front-end and back-end development.
- Developed several core features for the administrator dashboard of a civil water management system using Vue.js for the front-end and Spring Boot for the back-end.

## Skills

**Programming** Java, C++, JavaScript, HTML, CSS, MySQL, Python, C#, LaTeX, Golang

**Miscellaneous** Linux, Shell (Bash/Zsh), Android Studio, Unity(VR), Git, Jupyter, Django, PyTorch, SpringBoot, OpenGL, Vue.js, ProtoBuf