

CHANGJIE LU

Tel: +86 18112958745 | Email: lucha@kean.edu | [Homepage](#)

EDUCATION

Wenzhou-Kean University

Wenzhou, China

BA in Mathematics and Applied Mathematics (Minor in Computer Science)

Sept 2019 – Jun 2023(expected)

- GPA: 3.805/4.000(Major GPA: 3.833/4.000)
- Graduate Thesis: Domain Robust Medical Image Segmentation (Defended)
- Selected awards: Research Scholarship (top 1%, Sept 2021), Research Day Best Oral Presentation (top 1%, Apr 2022), Dean List Scholarship (top 20%, Sept 2021),
- Core courses: Calculus I II III, Real Analysis, Probability, Linear Algebra, Data Mining, Big Data Computing, Foundation of Big Data, Machine Learning, Numerical Analysis, Senior Seminar, Advanced AI(Graduate Level).

PUBLICATIONS

1. **Changjie Lu**, Shen Zheng, Gaurav Gupta “Unsupervised Domain Adaptation for Cardiac Segmentation: Towards Structure Mutual Information Maximization”, Jun 2022, published, *IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop (CVPRW)*
2. **Changjie Lu**, Shen Zheng, Zirui Wang, Omar Dib, Gaurav Gupta “AS-IntroVAE: Adversarial Similarity Distance Makes Robust Intro-VAE”, Jul 2022, JMLR of Asian Conference on Machine Learning (ACML)
3. **Changjie Lu**, A Survey on Causal Representation Learning and Future Work for Medical Image Analysis.
4. Shen Zheng, **Changjie Lu**, Yuxiong Wu, Gaurav Gupta “Segmentation-Aware Progressive Network for Perceptual Contrastive Image Deraining”, Nov 2021, published, *IEEE/CVF Winter Conference on Applications of Computer Vision Workshop (WACVW)*
5. Shen Zheng, Yuxiong Wu, Shiyu Jiang, **Changjie Lu**, Gaurav Gupta “Deblur-YOLO: Fast Real-Time Object Detection with Blind Motion Deblurring”, Apr 2021, published, *IEEE International Joint Conference on Neural Networks (IJCNN)*
6. Yining Lu*, **Changjie Lu***, Naina Bandyopadhyay, Manoj Kumar, Gaurav Gupta “Functional Optimization Reinforcement Learning for Real-Time Bidding”, Dec 2021, Underreview, *IEEE Transactions on Emerging Topics in Computational Intelligence (arxiv available)*
7. Shen Zheng, Jinqian Pan, **Changjie Lu**, Gaurav Gupta “PointNorm: Dual Normalization is All You Need for Point Cloud Analysis”, Jul 2022, ICRA Underreview (*arxiv available*)

RESEARCH EXPERIENCE

Wenzhou-Kean University

Wenzhou, China

Research Assistant to Department Chair/Assistant Professor Gaurav Gupta

Mar 2022 – Sept 2022

PointNorm: Dual Normalization is All You Need for Point Cloud Analysis

- Aimed to improve the accuracy of point cloud classification and segmentation
- Conducted literature review, mathematical analysis, coding, drawing
- Improved the classification performance by 1.5%. The tiny version could process 420 cases/s with high performance.
- Composed a paper as the third author, under double blind review

Research Assistant to Department Chair/Assistant Professor Gaurav Gupta

Mar 2022 – Aug 2022

AS-IntroVAE: Adversarial Similarity Distance Makes Robust Intro-VAE

- Aimed to analyze and solve the problems of posterior collapse and vanishing gradient of the Intro-VAE models
- Conducted literature review, idea, mathematical derivation including Wasserstein Distance estimation, Lipschitz Condition, spectral normalization, etc., coding, comparative experiments, and paper writing
- Improved visual effects of images by about 10% (FID score) with more stable training
- Composed a paper as the first author, under double blind review

Research Assistant to Department Chair/Assistant Professor Gaurav Gupta

Jan 2022 – Apr 2022

Unsupervised Domain Adaptation for Cardiac Segmentation: Towards Structure Mutual Information Maximization

- Aimed to improve the performance on multi-modality cardiac image segmentation tasks
- Consulted literature review on domain adaptation algorithm, reproduced previous algorithm, idea, mathematics derivation, code design, and conducted comparison experiments, ablation experiments, drawing, paper writing, etc.
- Derived a compact loss lower bound of object function and designed a plug-and-play mutual information neural estimation algorithm. Improved multi-modality cardiac image segmentation accuracy by 2-6%

- Completed a paper as the first author and published it at Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition Workshop

Research Assistant to Department Chair/Assistant Professor Gaurav Gupta

Sept 2021 – Dec 2021

Functional Optimization Reinforcement Learning for Real-Time Bidding

- Studied second-price real-time bidding algorithm for online advertisement
- Implemented the multi-agent reinforcement learning (DQN) algorithm, embedded reinforcement learning in operations research statistical modeling, and carried out coding, drawing, and paper writing
- Finished a paper as the co-first author and submitted it to IEEE Transactions on Emerging Topics in Computational Intelligence, under review

Research Assistant to Department Chair/Assistant Professor Gaurav Gupta

Mar 2021 – Nov 2021

Segmentation-Aware Progressive Network for Perceptual Contrastive Image Deraining

- The purpose was to improve the generalization performance of the image deraining algorithm and build a lightweight model to realize real-time image deraining
- Proposed the contrastive learning loss function, wrote code, and conducted comparison experiments and drawing
- Improved PSNR and SSIM by about 2% on the image deraining performance and processed about 30 images/s on a single 2080Ti GPU.
- Composed a paper as the second author and published it at Proceedings of the IEEE/CVF Winter Conference on Applications of Computer Vision Workshop

Research Assistant to Department Chair/Assistant Professor Gaurav Gupta

Sept 2020 – Feb 2021

Deblur-YOLO: Fast Real-Time Object Detection with Blind Motion Deblurring

- Studied real-time and efficient motion de-blurring algorithms
- Conducted literature review, drawing and loss function coding
- Improved the deblurring effect by 14%
- Completed a paper as the fourth author and published it at 2021 International Joint Conference on Neural Networks (IJCNN) (Oral)

WORK EXPERIENCE

Findability Science

India

Algorithm Consultant

Sept 2021 – Dec 2021

- Assisted in real-time advertising bidding business(online advertisement), analyzed and interpreted about 20 papers to their teams and designed operational research strategies, and utilized traditional machine learning methods, reinforcement learning methods and Python to realize the advertising bidding schemes, saving about 10% of the cost
- Improved the paper reading speed, mathematical ability, coding standards and teamwork competency

Newford Research Institute of Advanced Technology

Wenzhou, China

Data Analysis Intern

Sept 2020 – Dec 2020

- Conducted industry analysis of Zhejiang province, deeply analyzed and mined industrial data, conducted data visualization and Python script development
- Cleaned the data using Pandas, Numpy. Made visualization plots using Tableau and concluded an industry pattern report.

ADDITIONAL INFORMATION

Additional Professional and Extracurricular Experiences

- Founder & Computer Vision Research Group Leader, AI LAB, Department of Mathematics (Feb 2022): Organized weekly workshops, taught basic knowledge of computer vision, and organized code practice; Led team members to carry out computer vision research
- Participant, Invited Talk in Fudan University(Mar 2021): Conducted academic communications with doctoral students and supervisors of Fudan University, and learned medical imaging research knowledge and methods
- Resident Assistant, Wenzhou-Kean University (Jun 2020-Dec 2020): Assisted to solve dormitory disputes and epidemic prevention problems and maintained environmental security of dormitory
- AAAI-21, WACV-23's Reviewer

Computer and Language Skills

- Chinese (Native); English (TOEFL 107)
- Proficient in Python, Java, Matlab, R, Markdown, LaTeX, etc.

Interests

- Road Bicycle, Running; Fitness; Chinese Chess (Four-time City-Level Championship)