

# 李鼎权

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## 个人简介

李鼎权，鹏城实验室，网络智能部，助理研究员，深圳市鹏城孔雀特聘岗位。2015年毕业于南开大学，同时获得工学和理学学士学位，并于2021年获得北京大学应用数学专业博士学位，曾在鹏城实验室进行博士后工作。他已经在IJCV, TIP, TPAMI, ACM MM, CVPR, ICCV和NeurIPS等国际顶级期刊和会议上发表20篇论文。此外，他以第一提案人身份提交超过15项MPEG和AVS标准提案，其中7项被采纳，4项处于探索试验阶段，相应成果已申请2件中国专利。他是Electronics图像视频质量评价技术专刊的编辑，并为多媒体、计算机视觉和机器学习等领域的多个国际顶级期刊和会议提供审稿服务。他所提出的三个图像视频质量评价模型在MSU Video Quality Metrics Benchmark 2022中包揽了无参考模型性能榜的前三甲。

## 教育背景

北京大学 应用数学专业 理学博士 数学科学学院和北京国际数学研究中心 研究方向: 图像视频质量评价与感知优化 导师: 姜明教授, 蒋婷婷副教授	2015年9月 - 2021年1月
南开大学 电子科学与技术专业 工学学士 数学与应用数学专业 理学学士	2011年9月 - 2015年6月

## 已发论文

- Dingquan Li**, Kede Ma, Jing Wang, Ge Li. 2024. Hierarchical Prior-Based Super Resolution for Point Cloud Geometry Compression.  
**IEEE Transactions on Image Processing (TIP)** **SCI Q1, IF=10.6; CCF A**
- Dingquan Li**, Tingting Jiang, Ming Jiang. 2021. Unified Quality Assessment of In-the-Wild Videos with Mixed Datasets Training.  
**International Journal of Computer Vision (IJCV)** **SCI Q1, IF=6.071; CCF A**
- Dingquan Li**, Tingting Jiang, Ming Jiang. 2020. Norm-in-Norm Loss with Faster Convergence and Better Performance for Image Quality Assessment.  
**ACM International Conference on Multimedia (MM)** **Oral; CCF A**
- Dingquan Li**, Tingting Jiang, Ming Jiang. 2019. Quality Assessment of In-the-Wild Videos.  
**ACM International Conference on Multimedia (MM)** **Oral; CCF A**
- Dingquan Li**, Tingting Jiang, Weisi Lin, Ming Jiang. 2019. Which Has Better Visual Quality: The Clear Blue Sky or a Blurry Animal?  
**IEEE Transactions on Multimedia (TMM)** **SCI Q1, IF=5.452; CCF B**
- Dingquan Li**, Tingting Jiang, Ming Jiang. 2017. Exploiting High-Level Semantics for No-Reference Image Quality Assessment of Realistic Blur Images.  
**ACM International Conference on Multimedia (MM)** **CCF A**
- Wei Zhang\*, **Dingquan Li\***, Ge Li, Wen Gao. 2024. Lightweight Super Resolution network for Point Cloud Geometry Compression.  
**Data Compression Conference (DCC)** **CCF B**

8. **Dingquan Li**, Jing Wang, Ge Li. 2022. Near-Lossless Point Cloud Geometry Compression Based on Adaptive Residual Compensation.  
**IEEE International Conference on Visual Communications and Image Processing (VCIP)**
9. **Dingquan Li**, Tingting Jiang, Ming Jiang, et al. 2021. Reproducibility Companion Paper: Norm-in-Norm Loss with Faster Convergence and Better Performance for Image Quality Assessment.  
**ACM International Conference on Multimedia (MM)** **CCF A**
10. **Dingquan Li**, Tingting Jiang. 2019. Blur-Specific No-Reference Image Quality Assessment: A Classification and Review of Representative Methods.  
**Proceedings of the International Conference on Sensing and Imaging** **Invited Chapter**
11. **Dingquan Li**, Tingting Jiang, Ming Jiang. 2019. Recent Advances and Challenges in Video Quality Assessment.  
**ZTE Communications** **Invited Paper**
12. Yujia Liu, Chenxi Yang, **Dingquan Li**, Jianhao Ding, Tingting Jiang. 2024. Defense Against Adversarial Attacks on No-Reference Image Quality Models with Gradient Norm Regularization.  
**IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)** **CCF A**
13. Peibei Cao, **Dingquan Li**, and Kede Ma. 2024. Image Quality Assessment: Integrating Model-Centric and Data-Centric Approaches.  
**The Conference on Parsimony and Learning** **Oral**
14. Shuyi Jiang, Daochang Liu, **Dingquan Li**, Chang Xu. 2023. Personalized Image Generation for Color Vision Deficiency Population.  
**IEEE/CVF International Conference on Computer Vision (ICCV)** **CCF A**
15. Weixia Zhang, **Dingquan Li**, Chao Ma, Guangtao Zhai, Xiaokang Yang, and Kede Ma. 2022. Continual Learning for Blind Image Quality Assessment.  
**IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)** **SCI Q1, IF=24.314; CCF A**
16. Weixia Zhang, **Dingquan Li**, Xiongkuo Min, Guangtao Zhai, Guodong Guo, Xiaokang Yang, and Kede Ma. 2022. Perceptual Attacks of No-Reference Image Quality Models with Human-in-the-Loop.  
**Advances in Neural Information Processing Systems (NeurIPS)** **CCF A**
17. Xiaoqing Fan, Ge Li, **Dingquan Li**, et al. 2022. Deep Geometry Post-Processing for Decompressed Point Clouds.  
**International Conference on Quality of Multimedia Experience (ICME)** **CCF B**
18. Shuyue Jia, Baoliang Chen, **Dingquan Li**, Shiqi Wang. 2022. No-reference Image Quality Assessment via Non-local Dependency Modeling.  
**IEEE International Workshop on Multimedia Signal Processing (MMSP)**
19. Zhihua Wang, **Dingquan Li**, Kede Ma. 2021. Semi-Supervised Deep Ensembles for Blind Image Quality Assessment.  
**International Joint Conference on Artificial Intelligence (IJCAI) Workshop on Weakly Supervised Representation Learning** **Best Paper Runner-Up**
20. Qin He, **Dingquan Li**, Tingting Jiang, Ming Jiang. 2018. Quality Assessment for Tone-Mapped HDR Images Using Multi-Scale and Multi-Layer Information.  
**International Conference on Quality of Multimedia Experience (ICME) Workshop**

## 在投论文

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21. Weixia Zhang, **Dingquan Li**, Guangtao Zhai, Xiaokang Yang, Kede Ma. 2024. Comparison of No-Reference Image Quality Models via MAP Estimation in Diffusion Latents.

22. Chenxi Yang, Yujia Liu, **Dingquan Li**, Tingting Jiang. 2024. Exploring Vulnerabilities of No-Reference Image Quality Assessment Models: A Query-Based Black-Box Method.
23. Chenxi Yang, Yujia Liu, **Dingquan Li**, Yan Zhong, Tingting Jiang. 2024. Correlation & Error Attack: Adversarial Attack on No-Reference Image Quality Assessment from Two Perspectives.
24. Wenbo Zhao, Wei Gao, **Dingquan Li**, Jing Wang, Guoqing Liu, Ge Li. 2023. Range Division: Progressive Lossless Point Cloud Color Residual Compression.

## 工作经历

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### 助理研究员, 鹏城实验室

2023年1月- 至今

- 在网络智能部云脑使能所主持遥感数据分析与压缩专项课题研究

### 博士后, 鹏城实验室

2021年2月- 2023年1月

- 与合作导师李革教授和王静博士进行点云压缩及质量评价的课题研究
- 以第一提案人身份累计提交超过12个MPEG和AVS标准提案 (6个被采纳, 2个在探索试验阶段), 并申请2件中国专利

### 研究助理, 北京大学数字媒体所

2015年7月 - 至今

- 与导师姜明教授和合作导师蒋婷婷副教授进行图像视频质量评价课题的研究

### 课程助教, 北京大学

2016年3月 - 2019年1月

- 数学分析、高等数学、图论与集合论、计算机图形学等

### 学生助理, 北京大学数学科学学院

2017年6月 - 至今

- 北京大学《数学进展》期刊的L<sup>A</sup>T<sub>E</sub>X 模板的维护以及已接收文章的编辑排版
- 数学科学学院网站的后台维护

## 合作交流

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### OPPO计算影像专家联谊会

2023年1月 - 2024年12月

- 第一届委员, 参与OPPO计算影像相关活动

### 南洋理工大学博云搜索实验室(ROSE Lab, NTU)

2017年7月

- 与林维斯教授进行图像质量评价课题的研究和探讨

## 科研展示

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### IEEE Visual Communications and Image Processing

Dec. 13-16, 2022

- 口头报告: Near-lossless Point Cloud Geometry Compression Based on Adaptive Residual Compensation

### The 28th ACM International Conference on Multimedia

Oct. 12-16, 2020

- 口头报告: Norm-in-norm loss with faster convergence and better performance for image quality assessment

### The 3rd International Conference on Machine Learning for Cyber Security Oct. 8-10, 2020

- 大会报告: Image and video quality assessment in the wild

### AI: Always Fun, Always Fine — iQIYI

Sep. 24, 2020

- 特邀报告: Norm-in-norm loss with faster convergence and better performance for IQA

- The 27th ACM International Conference on Multimedia** 2019年10月  
· 口头报告: Quality Assessment of In-the-Wild Videos
- The 3rd PKU-NTU Workshop on AI+** 2018年10月  
· 特邀报告: Which Has Better Visual Quality: The Clear Blue Sky or a Blurry Animal?
- The 34th Academic Luncheon, School of Mathematical Sciences, Peking Uni.** 2018年10月  
· 特邀报告: Which Has Better Visual Quality: The Clear Blue Sky or a Blurry Animal?
- IEEE International Conference on Multimedia and Expo (ICME) 2018** 2018年7月  
· 口头报告: Quality Assessment for Tone-Mapped HDR Images Using Multi-Scale and Multi-Layer Information
- The 25th ACM International Conference on Multimedia** 2017年10月  
· 海报展示: Exploiting High-Level Semantics for No-Reference Image Quality Assessment of Realistic Blur Images

## 学术服务

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担任TPAMI, TIP, TMM, TCSVT, IJCV, ACM MM, CVPR, ICCV, ECCV, AAAI, IJCAI, NeurIPS, ICML, ICLR等期刊和会议的审稿人

Electronics关于图像视频质量评价技术专刊的客座编辑

## 荣誉奖励

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- 2024年1月 鹏城孔雀特聘岗位  
2023年3月 OPPO计算影像专家联谊会第一届委员  
2022年5月 提出的MDTVSFA, LinearityIQA, VSFA在MSU Video Quality Metrics Benchmark 2022上包揽了无参考模型性能榜的前三甲  
2019-2020 BICMR北大数学研究生奖学金、校长奖学金、NELVT优秀个人  
2018-2019 校长奖学金、廖凯原奖学金、学术创新奖  
2017-2018 国家奖学金、三好学生、NELVT优秀个人  
2016-2017 宜信互联网金融奖学金  
2015-2016 院长奖学金  
2011-2015 多次获得国家励志奖学金和三好学生等奖励荣誉、全国大学生数学竞赛决赛二等奖和赛区一等奖 (1+3次)、美国数学建模竞赛二等奖、国创一等奖等

## 技术特长

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软件工具:  $\text{\LaTeX}$ , Python, MATLAB, C++, Git, Bash  
深度学习框架: PyTorch, Keras, Caffe, Theano