TAN WANG

UESTC, No.2006 Xiyuan Avenue ⋄ Chengdu, Sichuan, P.R.China

(+86) 186-5602-3625 ⋄ wangt97@hotmail.com ⋄ Github: Wangt-CN ⋄ Website: Tan Wang

RESEARCH INTERESTS

Computer Vision, Vision-and-Language, Visual Reasoning, Causal Reasoning

EDUCATION

University of Electronic Science and Technology of China (UESTC)   *Sep. 2016 - Present*

Final-year undergraduate student in Electronic Information Engineering

GPA(Overall): **92.98**/100 or **3.99**/4.0

Rank: **1**/284 (2018-2019) or **1**/415 (first 2 years)

English: IELTS Total: **7.0** (Listening 7.0, Reading 8.0, Writing 6.0, Speaking 6.0)

Highlighted Courses: Calculus I (96/100), Calculus II (97/100), Pattern Recognition (99/100), Probability and Mathematical Statistics (96/100), Signals and Systems (95/100), Digital Signal Processing (96/100), Analog electronic Circuits (96/100), Electromagnetic Field Theory (97/100)

Chiba University, Japan   *Aug. 2017*

Exchange Program

Sakura Science Club scholarship awardee. Funded by Japan Science and Technology Agency (JST).

PUBLICATION & MANUSCRIPTS

Matching Images and Text with Multi-modal Tensor Fusion and Re-ranking

- **Tan Wang**, Xing Xu, Yang Yang, Alan Hanjalic, Heng Tao Shen and Jingkuan Song
- ACM MM2019 **Oral Presentation, 4.96% acceptance rate**

Cross-Modal Attention with Semantic Consistence for Image-Text Matching

- Xing Xu*, **Tan Wang***, Yang Yang, Lin Zuo, Fumin Shen and Heng Tao Shen
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS 2020)

Visual Commonsense R-CNN

- **Tan Wang**, Jianqiang Huang, Hanwang Zhang, Qianru Sun
- Under Review, CVPR 2020

Radial Graph Convolutional Network for Visual Question Generation

- **Tan Wang**, Xing Xu, Yang Yang, Alan Hanjalic and Heng Tao Shen
- *Major revision*, IEEE Transactions on Neural Networks and Learning Systems (TNNLS)

RESEARCH EXPERIENCE

Nanyang Technological University (NTU)   *Jul. 2019 - Present*

Research Assistant, MReal Lab

Supervised by Prof. Zhang Hanwang.

· *Visual Reasoning and Commonsense*

  • Motivation: Recently the research area focuses from recognition to cognition. The object detection and recognition is such reliable for us to move on visual and machine reasoning. We focus on how to create more smart and exciting model based on the existed recognition technology.

University of Electronic Science and Technology of China (UESTC)   *Mar. 2018 - Present*
Research Assistant, Center for Future Media
Supervised by Prof. Xing Xu and Prof. Yang Yang. Collaborated with Prof. Alan Hanjalic.

· *Image-text Matching with Semantic Consistence*

- Motivation: Recently the fine-grained methods for image-text matching that explore the local alignment between the image regions and the sentence words have shown advance on inferring the image-text correspondence. However, it is hard to achieve since some important image regions may be inaccurately detected or even missing. Meanwhile, some words with high-level semantics cannot be strictly corresponding to a single image region.
- We propose a novel hybrid matching approach named Cross-modal Attention with Semantic Consistence (CASC) for image-text matching, which is a joint framework that performs cross-modal attention for local alignment and multi-label prediction for global semantic consistence.

· *An Efficient Image-text Matching Framework*

- Motivation: The existing two kinds of methods for image-text matching cannot well balance the matching accuracy and model complexity.
- We propose a novel framework for image text matching that achieves remarkable matching performance with acceptable model complexity and much less time consuming.

· *Visual Question Generation Task*

- Motivation: The existing approaches typically treat the VQG task as a reversed Visual Question Answer (VQA) task, requiring the exhaustive match among all the image regions and the given answer with huge time consuming.
- We propose an innovative answer-centric approach for visual question generation termed Radial Graph Convolutional Network (Radial-GCN) to focus on the relevant image regions only.

SCHOLARSHIPS

National Scholarship (Top 2% student)	2016-2017
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Excellent Graduates of Sichuan Province (5 awardees in Department)	2019
Tang Lixin Sponsored Elite Scholarship (Only 60 awardees per year in UESTC)	2017-2018
Best Freshman Award (Only 1 awardee per year in Department)	2016-2017
Honor Student Scholarship (10 awardees per year in Department)	2017-2018
Outstanding Student Scholarship (Top 10% student)	2016-2017
Outstanding Student Scholarship (Top 10% student)	2017-2018
Outstanding Student Scholarship (Top 10% student)	2018-2019

LEADERSHIP

Lecture Group of EE Department
Founder & President   *Oct. 2017 - Sep. 2018*
- Organized academic forum, sharing sessions, Q&A meetings more than 30 times, serving over 1000 students on studying and future planing.
- The team grows to 30 people and won the Outstanding Student Organisation prize in 2018.

Innovative Entrepreneurship Project of UESTC
Team Leader   *Sep. 2017 - Mar. 2018*
- This project focus on the pedestrian detection in low-light condition with excellent conclusion. We combine the recent pedestrian detection models with the low-light image enhancement algorithm based on Laplace operator.
- Responsible for the code implementation and project promotion.

REVIEWS

Reviewer for ICME 2019
Help to review for CVPR 2020, CVPR 2019, AAAI 2019, KDD 2019, Access

SKILLS

Programming Languages	Python, Matlab, LaTeX, Shell
Deep Learning	Pytorch, Tensorflow
Others	Multisim, VerilogHDL