Shuaiyi Huang

199 Huanke Road, Pudong, Shanghai, China 201210
(+86)18702128717 ⋄ huangshy1@shanghaitech.edu.cn ⋄ shuaiyihuang.github.io

EDUCATION

ShanghaiTech University, Shanghai, China

M.Sc. in Computer Science, Sep 2017 - June 2020

- **GPA: 3.85/4.0**
- Supervisor: Xuming He
- Relevant Courses: Machine Learning, Deep Learning, Digital Image Processing

Tongji University, Shanghai, China

B.E. in Software Engineering, Sep 2013 - July 2017

- **GPA: 4.62/5.0**
- **Rank: 12/180**
- Supervisor: Jianwei Lu
- Relevant Courses: Computer Vision, Virtual Reality, User Interface Design, 3D Animation and Post Production, Computer Graphics

RESEARCH INTEREST

My research interests broadly include Deep Learning and Computer Vision, with a focus on scene understanding and low-level vision using strong or weak supervision. I am especially interested in segmentation, weakly-supervised correspondence, occlusion-aware scene understanding, visual question answering, and video analysis.

PUBLICATIONS

- **Shuaiyi Huang**, Qiuyue Wang, Songyang Zhang, Shipeng Yan, Xuming He. Dynamic Context Correspondence Network for Semantic Alignment. *International Conference on Computer Vision (**ICCV**)*, 2019. **PDF Code**
- Chen Zhu, Yanpeng Zhao, **Shuaiyi Huang**, Kewei Tu, Yi Ma. Structured Attentions for Visual Question Answering. *International Conference on Computer Vision (**ICCV**)*, 2017. **PDF Code**

RESEARCH EXPERIENCES

Learning Confidence-aware Refinement for Semantic Correspondence
Advisor: **Xuming He** 2019

- Highlights: (i) the first to consider the uncertainty of predictions in this task; (ii) the first to utilize a generative adversarial model to measure the quality of semantic correspondence.
- Two key parts in our pipeline: (i) a confidence-aware refinement procedure to propagate reliable information recursively; (ii) a novel and effective self-supervised adversarial learning framework.
- The relevant paper is in preparation for submission.

Dynamic Context Correspondence Network for Semantic Alignment
Advisor: **Xuming He** 2018 - 2019

- Key observations: (i) local representations are sensitive to repetitive patterns and local ambiguities; (ii) there is a trade-off between localization precision and encoding semantic context.

- Three key parts in our pipeline: (i) an effective context-aware semantic representation encoding spatial layout for robust matching against local ambiguities; (ii) a novel dynamic fusion network to weave the advantages of both local and context cues; (iii) a multi-task loss to facilitate weakly-supervised learning.
- The relevant paper has been accepted in ICCV 2019.

Visual Question Answering
Advisor: **Yi Ma**, **Kewei Tu** 2017

- Highlights: (i) the first to explore structured attention in visual question answering to address the problem of limited receptive fields of CNNs; (ii) demonstrating how to unfold the iterative inference algorithms for CRF as recurrent layers in deep networks
- The relevant paper has been accepted in ICCV 2017.

TEACHING EXPERIENCES

- Teaching Assistant, CS 280: Deep learning 2018, ShanghaiTech University
  - ◇ Give tutorials on machine learning basics; design homework and provide the solutions; manage the grading and other administrative issues.

INTERNSHIP

Algorithm Intern, **PerkinElmer**, Shanghai, China July - Dec, 2016
Work on *numerical calculation* related algorithm. Mentor: Sheng Ding

- Implemented boxcar smoothing, spline interpolation, etc. algorithms.
- Participated in research on spectra search, implement Local Sensitive Hashing algorithm in Matlab.

Software Engineering Intern, **CheXiang**, Shanghai, China July - Sep, 2015
Work on *data preprocessing,database* and *html*. Mentor: ChaoMeng Zeng

- Database with MySQL.
- HTML and javascript.

HONORS AND AWARDS

ShanghaiTech University Merit Student 2019

ShanghaiTech University Outstanding Student 2018

First Prize, Tongji University Academic Scholarship 2016

Second Prize, Tongji University Academic Scholarship 2015

Tongji University National Encouragement Scholarship 2015

Tongji University Outstanding Student 2015

TECHNICAL SKILLS

Languages: Python, Matlab, C++/C, Java, Javascript, SQL
Frameworks & Technologies: Pytorch, OpenCV, Android, Node.js
Tools & Platforms: Git, Docker, Unity3D, Linux/Windows

SERVICE

Deputy director of the Ministry of literature and art 2014-2015
Tongji University