ZIXIA XIA | CURRICULUM VITAE

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EDUCATION

Master of Computer Science and Technology Sep 2020 - Jan 2023 (expected)
Tianjin University, Tianjin, China
GPA: 88.71/100 (Top 3%)
Courses: Deep Learning (92), Software Architecture (93), Applied Statistics (93)

Bachelor of Software Engineering Sep 2016 - Jun 2020
Tianjin University, Tianjin, China
GPA: 86.28/100 (Top 10%, Postgraduate recommendation)
Courses: Programming Practice (93), Formal Methods (93), The Design and Analysis of Algorithm (88), Advanced Mathematics (99), Linear Algebra (92), Discrete mathematics (90)

PUBLICATIONS

Zixia Xia, Shuai Guo, Di Sun, Yaozhi Lv, Honglie Li, Gang Pan. "Structure-aware dehazing of sewer inspection images based on monocular depth cues", Computer-Aided Civil and Infrastructure Engineering, 2022. (IF:10+)

Gang Pan, **Zixia Xia**, Kang Liu. "Domain Adaptive Object Detection with Dehazing Module". (In preparation)

WORK EXPERIENCE

Microsoft summer/2022
Software Engineer Intern *Suzhou, China*
tech: active directory, tenant relocation, powershell, git

- Built a brand-new cmdlet to fix incorrect service instance during forward sync
- Designed and implemented an DIT size aware symphony AD handler

China Automotive Technology and Research Center summer/2019
Research Intern *Tianjin, China*
tech: GPU-learning, YOLO v3, traffic sign detection, autonomous driving

- Self-built a NVIDIA Jetson TX2-based deep learning platform
- Provided a self-constructed dataset of China traffic signs
- Implement real-time traffic sign detection based on YOLO v3

PROJECTS

A software for automatic defect detection in sewers
Feb 2022 - July 2022
tech: React, Django, CSS, HTML, labelme, YOLO v5

- Built a software for automated sewer inspection, including data processing and deficit detection
- Provided a dataset for sewer deficit detection with 20912 images, including 8 classes
- Implemented sewer deficit detection based on YOLO v5

Structure-aware dehazing of sewer inspection images based on monocular depth cues
Aug 2021 - Jan 2022
tech: camera calibration, 3D vision, depth estimation, multi-task learning, coordinate attention

- Proposed a depth estimation method based on camera calibration and monocular cues
- Synthesized hazy images based on atmospheric scattering model with varying atmosphere light (0.6, 0.8, 1), scattering coefficient (1, 2, 3)
- Built a structure-aware non-local (SANL-Net) network comprising of a Semantic Net, a Spatial Net, and a structure-aware non-local (SANL) module
- Improved model performance to 147 (MSE), 27.28 (PSNR), 0.8963 (SSIM), and 15.47M (parameters)
- Applied SANL-Net to real world images, and high-level vision tasks achieved higher accuracy on those images

Domain-adaptive object detection with dehazing module
May 2022- present
tech: domain-adaptive, object localization, perceptual loss, joint training

- Utilized trained Faster-RCNN to train the dehazing net with the preceptual loss

- Proposed a Domain-adaptation module with instance-level and pixel-level domain classifier to implement consistency regularization
- Generalized the whole model to both hazy and clean scenes
- Boosted mAP to 49.51% on CitySpace and 41.01% on Foggy CitySpace, higher than other advanced methods

Fire detection of forest images based on deep learning methods
Mar 2021 - May 2021
tech: Faster-RCNN, R–FCN, YOLO v5

- Provided a dataset for fire detection
- Compared performances of different models on fire detection

A grid-background removal network based on domain transform
Jan 2020 - May 2020
tech: domain transform, Discrete Cosine Transform (DCT), ResNet

- Analyzed how domain transform contributed to gird processing
- Proposed a grid removal network utilizing DCT

SKILLS

Programming Languages	Python, C/C++ , MATLAB, C#, Java, Javascript, VB
Library	Pytorch, Tensorflow, Numpy, Pandas, Matplotlib, OpenCV, React
Languages	English (IELTS: 7.0), Chinese (Mandarin)

ACHIEVEMENTS

Academic Scholarship	2020 - 2021
Sailing Independence Award	2020
Advance Individual	2017 - 2019
Merit Student	2017 - 2019

OTHER EVENTS

Volunteer for China Society Of Image and Graphics (CSIG).	2021 - present
Attend Vision And Learning SEminar (VALSE 2020).	2021