Zhaoting Gong

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EDUCATION

School of Art and Design, Guilin University of Electronic Technology, China   Sep 2019 - Jun 2021

Study in Digital Media Technology, GPA 83.1, rank 6 out of 61

School of Computer and Information Security, Guilin University of Electronic Technology, China   Sept 2021 - Present

B.E. in Computer Science and Technology, GPA 86.1, rank 28 out of 309 (9%)

RESEARCH EXPERIENCES

Local Spatial Awareness Convolution for Light Weight Image Segmentation   Sep 2022 - Jun 2023

Advisor: Prof. Zetao Jiang, Guilin University of Electronic Technology

➤   Manuscript: LightSeg: Local Spatial Perception Convolution for Real-Time Semantic Segmentation at Applied Sciences

- Proposed a novel solution of a compact and efficient model named LightSeg for real-time semantic segmentation
- Designed a module named LSPConv and related structures aiming at efficient feature extraction
- Proposed a hierarchical feature decoding and fusion module for image segmentation
- Applied model onto edge computing device (NVIDIA Jetson Series) with performance improvements

High-Precision Multi-scale Image Segmentation   Nov 2021 - July 2022

Advisor: Prof. Zetao Jiang, Guilin University of Electronic Technology

➤   Manuscript: STDC-MA network for semantic segmentation at IET Image Processing

- Conducted ablation experiment on multiscale feature aggregation and observations
- Proposed a feature alignment module fixing pixel offset between high-level and low-level features
- Proposed a hierarchical multiscale attention mechanism revealing the relationship among attention regions

Bi-Boundary Attention for Duo-Branch Segmentation | Guilin University of Electronic Technology   Mar 2023 -Present

➤   Conducted sufficient survey on prevailing attention mechanism

➤   Conducted ablation research on various multi-branch CNN based image segmentation models

➤   Conducted research on the effectiveness of explicate edge features on spatial-wise attention and feature fusion

➤   Proposed a composite attention module for feature fusion between different network branches

Using frequency attention attacking target detectors | Guilin University of Electronic Technology   Jan 2022 - Oct 2022

Advisor: Prof. Zetao Jiang, Guilin University of Electronic Technology

➤   Manuscript: Using Frequency Attention to Make Adversarial Patch Powerful Against Person Detector at IEEE Access

- Proposed a novel approach that introduces frequency domain attention to optimize the attack capabilities of adversarial patches
- Proposed a frequency-domain attention module for patch generation
- Raises the patch's robustness when defending against adversarial attacks using JPEG compression technique

PROJECT EXPERIENCES

AI assisted driving information and security system | Team Leader   Feb 2022 - Present

➤   Being responsible for launching and maintaining the project

➤   Designing both online and offline inference services using TensorRT, PyTorch and Flask

➤   Training and deploying semantic segmentation model for drivable area detection

➤   Designing a software level overclocking strategy as optimization for responding speed of sensors and control system

WORKING EXPERIENCES

Guangxi Key Laboratory of Image and Graphic Intelligent Processing | Research Assistant | Guilin   Jul 2022 - Aug 2022
- ➢ Adapting convolutional neural network models onto TensorRT and Openvino platforms
- ➢ Developing and maintaining an illegal driving behavior detection service backend using dotnet
- ➢ Training and deploying target detection and depth estimation models for vehicle distance detection
- ➢ Being responsible for documentation and extensibility and technical maintenance

NTU Business AI Lab **Internship Program** | Research Intern | Team Leader | Singapore   Aug 2023
- ➢ Research project on Instant Pneumonia Classification
- ➢ Achieved unconscious visualization of lesion location via attention accumulated on pixel gradients
- ➢ Being responsible for system effect demonstration and algorithm explanation for the final presentation
- ➢ Recognized for the only Winner Group of the research project

LEADERSHIP AND ACTIVITIES

Student Association of Science and Technology | School of Computer Science | Vice President   Sep 2021 - Sep 2022
- ➢ Being responsible for adjusting training plans for various learning and development directions
- ➢ Launched a computer vision community for beginners named ml.akasaki and maintained related blogs
- ➢ Being responsible for drafting new association policies and coordinated discussions to finalize the document
- ➢ Chairing weekly meetings to handle administrative matters and feedback from members

Laboratory of Cloud and IoT | Guilin University of Electronic Technology | Project Leader   Jun 2022 - Present
- ➢ Recruited 5 members from different major to maintain a project.
- ➢ Maintaining in an intelligent driving and auxiliary security project
    - ■ Being responsible for fundamental construction of edge computing and control system software
    - ■ Bring responsible for fundamental construction of interaction strategies between sensors and inference service
    - ■ Proposed system optimization for the project with dynamic inference pipeline

AWARD AND HONORS

- ➢ National Second Prize in the 2020 China Collegiate Computing Contest Artificial Intelligence Innovation Contest (8 out of 2665)
- ➢ National First Prize in the 2021 China Collegiate Computing Contest Network Technology Challenge (13 out of 2000)
- ➢ National Second Prize in the 2021 China Students Service Outsourcing Innovation Entrepreneurship Competition (87 out of 6750)
- ➢ National Second Prize in the 2021 College Student Embedded Chip and System Design Competition (25 out of 2781)
- ➢ National Third Prize in the 2022 Intel Cup Undergraduate Electronic Design Contest – Embedded System Design Invitational Contest
- ➢ University First Prize for 2023 Excellent Bachelor's Graduation Project (21 out of 5000)
- ➢ University Excellent Student Cadre in 2021 (50 out of all)

SKILLS

- ➢ Solid deep learning driven computer vision and machine learning experiment skills, familiar with PyTorch APIs
- ➢ Essential writing skills for composing research manuscripts and technical reports
- ➢ Long-term user of ArchLinux, with certain operation and maintenance capabilities
- ➢ Strong experiences using GIT for project collaboration and ability to work remotely
- ➢ Skills of backend software development using dotnet as well as random skills for maintaining static website
- ➢ Programming Languages: Python / C# / C++ / Java / Kotlin / TypeScript / SQL
- ➢ Standard English Tests: GRE: Verbal - 153, Quantitative – 163, Analytical Writing - 4.0
- ➢   TOEFL: Total 100 (Reading 27, Listening 25, Speaking 21, Writing 27)