Yiyang Song (宋易洋)

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EDUCATION

Dalian University of Technology (DUT)
International School of Information Science&Engineering

- Major in Software Engineering
- Overall GPA: 92.1 Rank: 3/70
- *Main Course and Score*:

Linear Algebra	96	Probability Theory	96
Discrete Mathematics	95	Data Structures and Algorithms	94
Digital Signal Processing	98	Computer Vision	100

RESEARCH

Supervised by Prof. Miao Zhang, OIP Lab
Field: Salient Object Detection (SOD)

Feature Reintegration over Differential Treatment:
A Top-down and Adaptive Fusion Network for RGB-D Salient Object Detection

- Proposed a top-down multi-level fusion structure. In the top-down pathway, the Interweave fusion module effectively integrates the global information, while the gated select fusion module discriminatively selects useful local features.
- Designed a *Multi-scale Fusion Module*, which is special for our top-down architecture, to alleviate multi-scale mixing.
- Introduced a tailored Adaptive Boundary-aware Loss, which consists of BCE Loss, Boundary-aware Loss, and an adaptive factor to balance the weight of the two loss functions.

Submitted to IEEE TCYB

Dynamic Enrich and Refine Network for Light Field Salient Object Detection

- Proposed Dynamic Convolution Modules guided by All-Focal images to enrich and refine Light Field information
- Devised a tailored Impurity Resistance Loss (IR Loss) to filter out the impurities in the enriched Light Field features
- Conducted extensive experiments on three Light-Field datasets, proving the proposed network achieves comparable performance over 18 state-of-the-art 2D, 3D, and 4D methods.

To be submitted to AAAI 22

PROJECT

CVTG: Computer Vision Testing Ground
https://nzmzdwdzh.github.io

- Test the generalization ability of the thesis model on the web end
- Implemented traditional computer vision algorithms such as Canny and deep learning algorithms such as ResNet
- Convenient for non-computer vision practitioners to obtain the processed images

CHORM: Chord Master for Extracting and Learning Chords

- Separated multi-track music using a neural network with U-Net architecture
- Read and implemented Music Information Retrieval papers like Google Onsets and Frames

HONOR

First Prize of Liaoning province in Contemporary Undergraduate Mathematical Contest in Modeling

- Modeled an implementation program for ordering and transporting raw materials based on goal programming
- Utilized ARIMA and other algorithms to create four metrics
- Evaluated suppliers by the TOPSIS model based on entropy weight