

Yu-Wei Chen

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SUMMARY

Image processing and machine learning algorithm engineer with 3+ years of experience developing both traditional signal processing and ML-based algorithms. Experienced in image restoration & enhancement, super-resolution, HDR, and semantic segmentation.

EXPERIENCE

Algorithm Engineer

2022/9 – Present

NovaTek Microelectronics Corp.

Hsinchu, Taiwan

- Developed a temporally stable AI semantic segmentation model. Reduced **20%** parameters and **49%** SRAM to achieve >165 FPS and **deploying on** mobile ASIC. Work under label absent scenario
- Designed adaptive AI video enhancement model. Reducing **77.2%** parameters from benchmark and supporting more than **3** types of artifacts. Performed QAT and **delivered demo** on NovaTek mobile ASIC
- Develop and optimize interactive AI model for super-resolution and temporal denoising. **Demo delivery**
- Maintained HDR display algorithms, including HDR10+, HDR vivid, and HLG, etc. Performed fixed-point precision analysis, cost reduction evaluation, competitor algorithms analysis, and issue solving. Collaborated with Picture Quality team and Hardware Designer
- Efficiently executed ad-hoc requests, include 4 in-depth technical surveys that led to 2 implementations, and resolved 3 quality issues through algorithm improvements. Maintain flat region detection and scaler. Provide issue solving, quality tuning, and cost reduction support

AI Research Intern

2020/7 – 2020/9

Caloudi Corporation

Taipei, Taiwan

- Developed time-series anomaly detection and forecasting algorithms, built RESTful APIs and deployed ML pipelines on Azure App Service

EDUCATION

National Taiwan University

Taipei, Taiwan

M.S. in Graduate Institute of Communication Engineering

2020/9 - 2022/6

- Master Thesis: *Multiple Degradation Image Enhancement, Domain Adaptation, Object Detection and Beyond*
Advisor: Prof. Soo-Chang Pei
- GPA: 4.2/4.3 Ranking: 26/141(18.4%)
- Teaching assistant for EE-3031 Computer Programming
- Selected Courses: Advanced Computer Vision, Digital Visual Effect, 3D Computer Vision with Deep Learning Applications, Deep Learning Computer Vision, Digital Image Processing, Data Science

National Central University

Taoyuan, Taiwan

B.S in Computer Science and Information Engineering

2017/9 - 2020/6

- Undergraduate Research: *AI Camera: Application of Photography Aesthetic Assessment Based on Neural Networks*
Advisor: Prof. Mu-Chun Su
- Credit: 170 GPA: 3.93/4.0 (Overall). 4.0/4.0 (Major). Ranking: 24/134 (17.9%)
- Selected Courses: 3D Computer Graphics, Computer Vision An Overview, Artificial Intelligence, Neural Network, Computational Intelligence, Introduction to Deep Learning, Software Engineering Practices
- Honor: **Second Place** in 2019 International ICT Innovative Services Awards Titansoft agile develop award;
Excellent grades in 2019 AICUP
- Leadership: Team lead, Manuscripts Group, Literary Award of National Central University

PUBLICATION

- [1] **Yu-Wei Chen***, Soo-Chang Pei. "Always Clear Days: Degradation Type and Severity Aware All-In-One Adverse Weather Removal", IEEE Access, 2025. (**Citation: 17**)
- [2] **Yu-Wei Chen***, Soo-Chang Pei. "Domain Adaptation for Underwater Image Enhancement via Content and Style Separation" IEEE Access, 2022. (**Citation: 54**)
- [3] **Yu-Wei Chen***, Soo-Chang Pei, Chiou-Shann Fuh, "DTLN: A Deep Two branch Lightning Network with Saturation Adjustment for Low light Enhancement", in Proc. of the 34 th IPPR Conf. on Computer Vision, Graphics and Image Processing (CVGIP), Aug.22 24, 2021.

TECHNICAL SKILLS

Embedded/HW: Quantization, Fixed-point optimization, Model compression

Programming Languages: Java, Python, C, C++,

Frameworks: Pytorch, Keras, Tensorflow

Technical Writing: \LaTeX