Yang, Junran

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Education

Northwestern University, Evanston, IL	2022/09 - 2024/03
MS in Computer Engineering	

University of Electronic Science and Technology of China, Chengdu, Sichuan	2018/09 - 2022/06
Bachelor's in Electronic Science and Technology	GPA 3.84 / 4.0

Skills

Programming Languages:	Java, C++, Python, Kotlin, HTML, CSS, Javascript, SQL, LaTeX
Tools:	SpringBoot, LLVM, Vue, JUnit, Git

Experience

ZTE Co., Ltd, Chengdu, Sichuan   2022/03 - 2022/07
Machine Learning Engineer Intern

- Worked on Low-Light Enhancement algorithm in Python powered by Pytorch and Tensorflow 2.x to enhance the color of ultra-low-light photos (taken under 0.002 lux) to normal light ones.
- Assessed and verified the performance of 25 DL algorithms from ICCV, CVPR and ECCV in 2019-2022 on Low-Light Enhancement by contracting their models' performance in the ablation study and collecting the SOTA data.
- Utilized attention mechanism in papers and lowered the FLOPS of our existing algorithm in ultra low light pictures processing, improving the PSNR for about 2 and SSIM for approximate 5% of the enhanced pictures on LOL dataset.
- Adapted our algorithm on smart phone devices by TFLite and did the quantization to adjust to the computing power of mobile devices.
- Cooperated with my mentor on conference paper about Low-Light Enhancement (in review), completing Related works, SOTA and Result analysis parts of the paper.

Microwave Photon Filter (MPF) Based on the Nonlinear Behavior of Semiconductor Lasers   2020/12 - 2021/10

- Implemented Matlab numerical simulation program of MPF response to forecast the performance in spectrum of Laser Diode while being injected by modified optical signal.
- Realized the method to solve rate equations(a kind of partial differential equations) of Laser Diode by transferring them into the difference equations and using Runge-Kutta methods.
- Analyzed the result of the simulation program, comparing the difference in performance of a realistic laser system and the simulation code.

Projects

Compiler of CS322 and CS323 in Northwestern Univeristy (Compiler in front-end, back-end and middle-end)

- The Front-end includes out-of-boundary checking, implementation of scope, encoding and decoding, the back-end includes instruction-selection(tree tiling), register allocation(graph coloring) and assembly code generation.
- The Architecture of the CS322 project is a chain, which means that one languange does one or two function which is actually used in a real industry compiler.
- The middle-end implements optimize in constant folding and propogation, alias analysis, loop unrolling by using tools in LLVM.

Lost and Found Platform Robot (Lost-Found-Forward (github.com))   2020/10 - 2022/01

- Built a chat bot for QQ, an instant messaging app, to assist the administrators to process messages from the UESTC Lost and Found QQ groups they are managing, using Kotlin.
- Collected direct messages and group messages from the students, labeled them with the students' QQ id and assigned tasks to administrators to validate and broadcast.
- Developed broadcast feature for administrators to send messages to all the groups synchronously. Supported message revoke by recording all the messages ids sent out.
- Enabled direct communication between the student and the assigned administrator with the bot as an agent.