Ting Li

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EDUCATION

Johns Hopkins University   *August 2020 - May 2024*
3rd Year, Electrical Engineering (B.S.) & Computer Science (B.S.)   Cumulative GPA: 3.82

RESEARCH INTEREST

Computer Vision, Self-supervised Learning, Visual Saliency, Knowledge Distillation, ML Hardware Accelerators

RESEARCH EXPERIENCE & PROJECTS

Computational Sensory-Motor Systems Laboratory   September 2022 - Present
Advisors: Prof. Ralph Etienne-Cummings, Khaled Aboumerhi

· Designed a pipeline to extract and export gaze vectors from HTC Vive VR Headset in real-time.
· Developed a user interface to retrieve gaze vector data and visualize user's gaze in real-time.
· Spearheaded experiment design to collect participants' gaze vectors when presented with event-based footage to validate the spatiotemporal filters learned by unsupervised Deep Slow Feature Analysis.
· Constructing a "ground-truth" dataset for event-based visual saliency as a benchmark for visual saliency algorithms.

Objective Assessment of Technical Skills in Cataract Surgery   May 2023 - Present
Advisors: Prof. Vishal Patel, Prof. Swaroop Vedula

· Developing a temporal convolutional network with attention mechanisms to predict an ophthalmologist's performance in a Cataract Surgery using video inputs.

Monocular Depth Estimation   March 2023 - May 2023
Computer Vision Project

· Developed a deep learning model to estimate the depth of each pixel in a single RGB image leveraging unsupervised transfer learning, and investigated the role of pose estimation in model performance.
· Co-designed a depth network that consists of a U-net architecture with ResNet blocks for predicting depth maps from RGB images to estimate the depth of each pixel.
· Introduced three loss functions to optimize the model: Black Loss for the number of black pixels in the reconstructed image; Photometric Reconstruction Loss to measure color differences; and Smooth Loss to improve depth map smoothness.

Hate Speech and Offensive Language Detection   October 2022 - December 2022
Deep Learning Project

· Leveraged PyTorch Framework to co-design a deep learning model to automate hate speech and offensive language using word2vec embedding and LSTM method.
· Implemented a random sampling function to balance the training dataset.
· Minimized Cross-Entropy loss and achieved an accuracy of 90.5% and a precision of 98.2% by incorporating the adam optimizer algorithm to adaptively adjust learning rate.

WORK EXPERIENCE

Firmware Engineering Intern   June 2023 - Present
Amphenol Corporation

· Implementing an I2CClient class to seamlessly integrate SUB-20 API calls into the existing I2CClient framework.
· Designed a compact and versatile SFP host tool with a user-friendly interface utilizing WinForms C++/CLI.
· Implemented live macro editing functionality, allowing for dynamic generation and removal of buttons that encapsulate those I2C macro instructions.
· Enabled real-time execution of I2C commands and provided immediate data feedback for thorough inspection and analysis.

Course Assistant, Digital Systems Fundamentals   February 2022 - May 2022
Johns Hopkins University

· Led office hours and circuit debug sessions to help students build a solid understanding of topics including sequential logic, state machines, and memory devices.
· Graded homework assignments and exams.

Software Developer (Independent Contractor)   March 2021 - August 2021
Georgia Tech Athletic Association

· Collaboratively created a tool that helps Georgia Tech tennis team filter and track performance of rising tennis talents based on customized criteria and rank filtered athletes based on scores/rankings from different sources (e.g., UTR, ATP, etc.) and customized weight and built database in JSON format.

RELEVANT COURSES

Machine Learning: Deep Learning, Computer Vision, Intro Algorithms, Data Structures, Computer Systems Fundamentals, Signals and Systems, Digital Signal Processing.

SKILLS

Programming Languages: Java, C++, Python, MATLAB, VHDL, R, x86-64 assembly language
Technical Tools: PyTorch, Scikit-Learn, Numpy, Scipy, KiCAD, Cadence, LTSpice
Languages: English, Chinese

HONORS/AWARDS

Best GT Athletics Hack at Hacklytics   2021

Dean's List   2020 - 2023