

Irene C. Lee

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EDUCATION

Georgia Institute of Technology

Bachelor of Science, Computer Science [Concentration in Intelligence and Theory]
Minor in Economics
Honors Program

May, 2023

Atlanta, GA

GPA: 4.0

EXPERIENCE

Software Developer Engineering Intern

Alexa Organization [Python • TypeScript • JavaScript • HTML/CSS]

Summer 2021

Amazon

- Developed a multimodal Alexa skill that provides an optimized interactive user experience via utilization of implicit contextual information

Teaching Assistant

Georgia Tech

- Spring 2021** : CS2110 Computer Organization and Programming [C]
- Summer 2020** : CS 1332 - Data Structures and Algorithms [Java]

Research Intern

Summer 2020 - Winter 2021

Low Level Optimization for Deep Learning [Python • PyTorch]

Seoul National University

- Analyze low level processes involved in training deep learning models in order to develop a platform with which training process can be optimized/faster. Current research may be applied to distributed systems as well.

SKILLS

Programming :

RESEARCH/PROJECTS

Systems for Artificial Intelligence Lab (SAIL) Research

Deep Learning(DL) system research with Dr. Tumanov[Python • PyTorch]

Summer 2021 - Present

- Develop systems for the training and inference of DL models. Current research involves Federated Learning (secure training scheme using private data from multiple end clients) and the use of supernets.

Social and Language Technologies (SALT) Lab Research

Natural Language Processing Research Project with Dr. Yang [Python • PyTorch]

Fall 2020-Present

- Develop humor detection and generation models using natural language processing technique. Further study includes analyzing humors during covid pandemic in order to study how the pandemic has impacted people and how humor plays a role in it. Further study may involve not only humor detection and analysis but also humor generation.

Im2Vec : A Language Model Approach to Understanding Image Classification

Deep Learning Group Project [Python • PyTorch]

December 2020

- Im2Vec is a language model approach to visualizing and understanding images in image classification task. Im2Vec generates image embedding vectors for each class of image and shows relationships among images of different class.

RESEARCH PAPERS

- Refurbish Your Training Data: Reusing Partially Augmented Samples for Faster Deep Neural Network Training** USENIX ATC 2021
 - Accepted and presented at USENIX ATC '21
 - Key contributions include development of data refurbishing, a partial caching mechanism in data augmentation to make deep learning training faster, and implementation of Revamper, a data loading system realizing data refurbishing.
- Analysis of Input Pipeline Overhead for Training Image Classifiers with Data Augmentation** KSC 2020
 - Grand Prize at Korea Software Conference(KSC) 2020
 - Key contributions include identifying how the model being trained, the CPU-GPU ratio, and the amount of augmentation affect the input pipeline overhead and its implications in the real world.