Byeong Min Park

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Education

University of California, Berkeley August 2018 – May 2021

Bachelor of Science, Electrical Engineering and Computer Science

Related Coursework: Data Structure, Computer Architecture, Linear Algebra, Algorithms, Electrical Engineering, Probability, Artificial Intelligence, Machine Learning, Optimization Models, Security, Operating Systems

Experience

Junior Mentor, Computer Science Mentors August 2019 — May 2020

Mentored two weekly sections of 4-6 students in a classroom setting, focusing on lecture topics and exam-like questions from CS61A, an introductory Python-based computer science course

Participated in weekly staff meetings to discuss about logistics, teaching strategies, and content preparation

Course Tutor, University of California, Berkeley August 2019 — May 2020

Led two weekly office hour sessions along with a Graduate Student Instructor for CS61A, an introductory undergraduate course with 2000+ enrolled students

Taught programming concepts of abstraction and software through Python3, Scheme, and introductory SQL to small groups of students in need of additional help

Graded student projects and contributed to the course material

Projects

Route For All (routeforall.com)

Worked on a OpenStreetMap-based routing service that maps the optimal path for a list of user-inputted locations

Deployed OpenStreetMap API and Leaflet to write scripts that display an interactive map with turn-by-turn directions and customizable waypoints

Implemented Travelling Salesman Path algorithm with simulated annealing approximation for TSP-like routing calculation

Built the web server with Apache and PHP, planning to add mobile support for GPS tracking

Optimized CNN

Implemented a Convolutional Neural Network model in C99 to classify images from CIFAR-10 dataset through pattern recognition

Performed manual loop unrolling and other conventional optimization techniques to reduce cache usage

Utilized SIMD instructions and OpenMP to vectorize and parallelize classification, further speeding up computation

Achieved 21x speedup from naive implementation of CNN with 80% accuracy

Novelty Detection

Trained a Convolutional Neural Network through PyTorch using Fashion MNIST to build a novelty detection model that classifies new images of clothing from a different dataset

Designed a Generative Adversarial Network to generate fake images similar to those from Fashion MNIST and compiled a combined dataset of images for testing

Achieved 96% accuracy through the model

Skills

Programming Language: Java, Python, C, Golang, SQL, HTML, CSS, Javascript, Bash

Framework: Git, Pintos, Bootstrap, jQuery, React.Js, Node.Js, Django, Flask, PHP

Environment: Windows, Linux/UNIX

Language: Korean, English