Kian Zohoury

Email: kzohoury@berkeley.edu
Portfolio: kian.ai
Phone: 310-508-1617
Github: github.com/kianzohoury
Location: Los Angeles, CA

About Me

As a new graduate from the University of California, Berkeley, I am eager to enter the industry and develop my skills as a machine learning engineer. With a strong foundation in mathematics, I'm capable of understanding concepts from machine learning and implementing them efficiently in code. I am driven to write great software and work alongside smart individuals that share my passion.

Education

University of California, Berkeley — Berkeley, CA
B.A., Computer Science — 2015 – 2016; 2019 – 2022
Major GPA: 3.51/4.0

Coursework: Data Structure, Deep Neural Networks, Discrete Math & Probability, Efficient Algorithms, Intro to AI, Intro to ML, Linear Algebra/Differential Equations, Machine Structures, Multivariate Calculus, Natural Language Processing, Principles & Techniques of Data Science

Projects

Music Source Separation with Deep Learning – Auralflow, a PyPi Package — 2022
github.com/kianzohoury/auralflow

- Built a light-weight deep learning toolkit for training music source separation models in PyTorch, to solve the task of splitting music tracks into *stems* (i.e. vocals, drums, bass and other). Implements modifiable U-Nets, LSTM networks and Variational Autoencoders – model architectures that can be trained natively with auralflow or ported to custom training pipelines, enabling efficient workflows and faster development time.
- Incorporated techniques from digital signal processing (DSP): discrete Fourier transform, time-frequency masking and noisy phase approximation. Additionally, automatic mixed precision, gradient scaling, layer-specific learning rates and scheduling were used to stabilize gradient flow and training.
- Pre-trained models achieved impressive evaluation results on the MUSDB18 dataset – outperforming previous state-of-the-art models.

Waste Management using Image Classification – EcoShopper, a React Web App — 2021
github.com/kianzohoury/ecoshopper

- Developed a prototype UI and web/mobile application that classified a product as recyclable or perishable given its barcode as input from the user; utilized a novel data collection procedure that involved scraping the web for images related to an item's universal product code (UPC), tags and various metadata. Images were transformed and fed into a majority vote binary classifier deployed using Django.
- Collaborated with a team of Berkeley students to receive 2^{nd} place in our course's final project competition.

Skills

- *Languages*: Python, Java, C, JavaScript, HTML, SQL, Scheme
- *Libraries/Frameworks*: PyTorch, NumPy, Scikit, Django
- *Theory*: Runtime/asymptotic analysis, graph theory, dynamic programming, data structures, approximation algorithms, probability theory, least squares, optimization, proofs
- *Other*: Creating APIs, writing documentation, unit/integration testing, data cleaning/processing, debugging
- *Soft Skills*: Writing, speaking, drawing/diagrams, creating presentations
- *Traits*: Motivated, resourceful, focused, cooperative, open-minded

Experience

Audio Engineering - Freelance — Burbank, Hollywood, East Los Angeles
Certified Audio Engineer, Icon Collective — 2016 – 2018

- Delivered quality mixing and mastering services to independent vocal artists and popular electronic music producers (50k+ followers).
- Harnessed Digital Signal Processing (DSP) techniques such as spectral balancing/equalization, multi-band compression, gain staging, limiting, stereo imaging and phase correction.

Awards

- Regents' and Chancellor's Scholarship, UC Berkeley (2015)