

RIZQ KHATEEB - MACHINE LEARNING & SOFTWARE ENGINEER

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EDUCATION

University of Southern California Los Angeles, CA
Masters of Science in Computer Science (AI) August 2023-December 2024

- Relevant Course Work: Foundations of Artificial Intelligence, Machine Learning, Analysis of Algorithms, Applied Natural Language Processing, Database Systems, Deep Learning and Its Applications, Research Methods and Analysis for User Studies

University of California San Diego La Jolla, CA
Bachelors of Science in Cognitive Science (Machine Learning, Neural Computation) September 2019-March 2023

- Minor in Computer Science
- Relevant Course Work: Data Science in Practice, Supervised ML, Unsupervised ML, Modeling and Data Analysis, Object-Oriented Programming, Advanced Data Structures

EXPERIENCE

UCSD COGS Department La Jolla, CA
Instructional Assistant January 2023-March 2023

- Taught under Professor Jason Fleischer to help with grading and distribution of course materials for COGS 18 (Intro to Python)
- Instructed students during weekly office hours and discussion sections on homework and course lessons
- Formulated exam questions and collaborated with team at weekly meetings

Carnegie Mellon Software Engineering Institute Pittsburgh, PA
Artificial Intelligence Intern June 2022-September 2022

- Collaborated with a research team working on countermeasures for adversarial patch attacks on image detection with ResNet-50 and information leakage from pre-training machine learning models and its implications on patch transferability
- Generated dozens of patches using in-house experimental ML pipeline (Juneberry), and measured and graphed patch error rates to determine effectiveness of different patch types

NEATLabs UCSD La Jolla, CA
Undergraduate Researcher October 2021-September 2022

- Analyzed hundreds of EEG action-potential readings from animal tetrodes using Plexon Spike sorter to separate noise from data
- Performed experimental procedures, such as implants surgery, on dozens of animals subjects

Kaiser Permanente Santa Clara, CA
SYEP Intern June 2017-August 2017

- Interacted with dozens of nurses, 3 doctors, and several patients as part of the Pediatric ICU patient care team
- Learned about technical and logistical challenges related to attending to healthcare needs for 25+ patients

PROJECTS

SnippetRadar: Calendar For Unreleased Songs January 2025-Present

- Developing a Swift-based iOS app to identify both released and unreleased songs and notify users of song name, artist, and posted release date based on a simple lyrics search
- Integrated Genius API to search song lyrics and provide real-time feedback on whether the song is released, unreleased, or unavailable for thousands of songs, with the option to save songs to a personalized calendar

LLM Distillation For Financial Reports August 2024-December 2024

- Collaborated with a team of four to enhance accessibility and transparency in financial predictions by leveraging step-by-step distillation techniques for simplifying complex financial reports
- Benchmarked prominent LLMs, including Meta's LLaMA 3, Claude 3.5 Haiku, and FinGPT, distilling knowledge into smaller, task-specific models such as GPT-2 and T5
- Achieved superior performance through distillation (with distilled T5) as compared to non-distilled models such as FinGPT, demonstrating its use as a resource-efficient alternative to fine-tuning for financial tasks

Emotion Transition And Paraphrasing Using LLMs January 2024-May 2024

- Collaborated with a team of five members to analyze emotion transition and paraphrasing capabilities of Large Language Models
- Created curated datasets through utilization of existing datasets, and fine-tuned well-known LLMs, such as GPT-2, BART, and T5, for paraphrasing and emotion transition with application of zero-shot, few-shot, and supervised training methods

- Performed extensive research on six metrics (three custom metrics for emotion transition and three standard paraphrasing metrics) to determine the best-performing model for emotion transition and retaining sentence meaning

Implementation of Abbasi et al. LMBiS-Net

August 2023-December 2023

- Implement first publicly available implementation of LMBiS-Net model deployed in “LMBiS-Net: A Lightweight Multipath Bidirectional Skip Connection based CNN for Retinal Blood Vessel Segmentation” by Abbasi et al. from scratch
- Compared performance of LMBiS-Net implementation with Abbasi et al. on 4 older datasets, as well as new datasets to see further applicability

COVID vs. Pneumonia vs. Normal Lung X Rays

March 2022-June 2022

- Utilized image-masks and CNNs to process pixel data and train model to correctly classify a patient’s diagnosis based on a dataset containing hundred of lung X-rays
- Examined model on dozens of x-rays of healthy patients, pneumonia patients, and COVID positive patients

Unsupervised ML Techniques on CIFAR-10

January 2022-March 2022

- Compared K-Means Clustering to a combination of PCA and Gaussian Mixed Models to find option with better clustering performance
- Tested methods on CIFAR-10, a publicly available image database with 60000 color images of varying categories

CS:GO Winner Predictions

March 2021-June 2021

- Predicted winner of e-Sports tournament through utilizing predictive factors and logistic regression
- Improved accuracy by choosing best selection of over a dozen feature parameters with subset selection, and tested model with K-fold CV

Barcode Scanner for Nutritional Information

March 2021-June 2021

- Implemented barcode scanner utilizing webcam to fetch all nutritional data from an online data base with thousands of entries
- Implemented two libraries: OpenCV (cv2) library for image capture and ZBar (pyzbar) for barcode decode into model

LEADERSHIP AND INVOLVEMENT

ProductSC

Los Angeles, CA

Member

August 2023-December 2024

- Served as member of USC’s first and only professional product management society
- Engaged in weekly meetings and work with peers to further knowledge of product management
- Collaborated with team for semester case competition and finished in top 3

KSDT UCSD

La Jolla, CA

Member

October 2019-March 2020

- Served as a member in KSDT, UCSD’s only student-led radio station
- Designed 3 physical and digital marketing and promotional content to attract new listeners

Boy Scouts of America Troop 399

Santa Clara, CA

Former Member, Eagle Scout

June 2012-March 2019

- Achieved rank of Eagle Scout with BSA Troop 399, one of largest troops in Silicon Valley
- Served in various leadership and mentorship roles as an active member
- Carried out an Eagle Project focused on building 3 custom shelving units for a local food bank involving leading, fundraising, planning, construction and delivery aspects of entire project

SKILLS & CERTIFICATIONS

- Languages: Python, C, C++, R, SQL, Java, JavaScript, HTML, CSS, Swift, MATLAB, Bash
- Frameworks: TensorFlow, PyTorch, OpenCV, SciKit-Learn, Bootstrap, Pandas, NumPy, Matplotlib
- Machine Learning: Supervised, Unsupervised, Reinforcement, Ensemble, Neural Networks, Large Language Models
- Technologies: Azure, Git, Linux, Docker, VisualStudio Code, Microsoft Excel, Figma
- Certifications: Coursera Certified: SQL for Data Science
- Languages: English (Native Proficiency), Arabic (Limited Working Proficiency)