KAI MALLOY

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EDUCATION

University of California, Irvine Sept. 2017 - Jun. 2021

B.S. Computer Science | AI Specialization | **GPA: 3.85/4.00** | Deans List: 2017-2021

ICS Honors | Chancellor's Award | *Relevant Coursework:* Neural Networks and Deep Learning, Machine Learning and Data Mining, Projects in AI, Algorithms for Probabilistic and Deterministic Graphical Models

RESEARCH AND PROFESSIONAL EXPERIENCE

DataLab Group at UC Irvine | PI: Prof. Padhraic Smyth, Graduate Mentor: Casey Graff Mar. 2020 - Present

Undergraduate Researcher *Irvine, CA*

- Built novel convolutional and recurrent neural network models for wildfire prediction using PyTorch
- Created a dynamic animation script for forecasting California wildfires at different locations and times

Apple Jan. 2019 - Jul. 2019

iPhone Quality Engineer Intern *Cupertino, CA*

- Wrote visualization scripts and developed two full scale applications for analyzing iPhone Failure Analysis data
- Optimized large scale data processing task that took 10 minutes using internal tools down to 5 seconds with my Python script

LEADERSHIP ACTIVITIES

The Green Initiative Fund Sept. 2020 - Jun. 2021

Commissioner *Irvine, CA*

- Managed meetings and approved 20+ sustainable undergraduate projects that impacted the UC Irvine campus

Teaching at UC Irvine Mar. 2020 - Jun. 2021

Learning Assistant *Irvine, CA*

- Held office hours and assisted professor during lecture for 1 quarter of Discrete Mathematics and 2 quarters of Introduction to Programming

SELECTED PROJECTS

Song Classification and Recommendation with BERT: Deep Learning Course Project Mar. 2021

- Built a BERT song classification model that categorized happy and sad with 76% accuracy using PyTorch
- Used the embeddings from the BERT layer to solve a proxy task of song recommendation with k-means clustering and an inverted index

Deep Neural Networks for Removing Rain from Images: Machine Learning Course Project Dec. 2020

- Built an image-to-image deep neural network to remove rain from images using PyTorch
- Best predictions were reaching a Peak Signal to Noise Ratio of 77 and a Structural Similarity Index of 0.9

CNN and RNNs for Active Wildfire Forecasting: Summer Undergraduate Research Project Aug. 2020

- Received the UC Irvine Summer Undergraduate Research Grant
- Developed novel convolutional and recurrent neural networks that can predict hourly wildfire spread with 12 hour satellite data using PyTorch

Wine Quality Classification with SVM and Random Forest: Machine Learning Course Project Mar. 2020

- Visualized UC Irvine's Wine Quality dataset with various plots using NumPy and Matplotlib
- Built a Random Forest and Support Vector Machine classifier for the dataset using Scikit-Learn

TECHNICAL SKILLS

Programming Languages	Python, Java, C, C++, R, HTML, CSS, JavaScript
Data Science Libraries	PyTorch, Keras, Scikit-Learn, NumPy, SciPy, Pandas, Matplotlib, PyQtGraph
Other	Linux, Git, Vim, Slurm, MIPS (Assembly), LaTeX

ADDITIONAL INFORMATION

Fulbright Australia Semi-finalist | Bilingual: fluent in Japanese (spoken, written), English