KAI MALLOY

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EDUCATION

University of California, Irvine | B.S. Computer Science | Specialization in AI — Sept. 2017 - Jun. 2021
Chancellor's Award | ICS Honors | **GPA: 3.85/4.00** | Deans List: 2017-2021
Relevant Coursework: Neural Networks and Deep Learning, Machine Learning and Data Mining, Projects in AI, Calculus, Computational Linear Algebra, 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, trained on 150,000+ images of wildfire, weather, topography, and land cover from NASA satellites
- 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

SELECTED PROJECTS

CNN and RNNs for Active Wildfire Forecasting: ICS Honors Program Thesis — Jun. 2021

- Developed a recurrent addition to a convolutional neural network that can predict wildfire spread at 3 hour, 4 hour, and 6 hour intervals given 12 hour input data
- Information and Computer Sciences Honors Program with the Summer Undergraduate Research Grant

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

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

LEADERSHIP ACTIVITIES

The Green Initiative Fund: UC Irvine Student Government — 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 for 2 quarters of Introduction to Programming and 1 quarter of Discrete Mathematics

TECHNICAL SKILLS

Programming Languages	Python, R, Java, C++, 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 2021 Semi-finalist | Bilingual: fluent in Japanese (spoken, written), English