Kaustubh Deshpande

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EDUCATION

University of California, Los Angeles   Sep 2021 – Jun 2023
M.S. Applied Statistics   *Los Angeles, CA*

Courses Completed:

o Modern Methods in Statistics	o Statistical Computing & Programing	o Probability Modeling
o Applied Regression	o Mathematical Statistics	o Data Management
o Predictive Modelling	o Tools in Data Science	o Machine Learning
o Causal Inference		

University of California, Davis   Sep 2017 – June 2021
B.S. Biomedical Engineering + Computer Science Minor   *Davis, CA*

Courses Completed

o Introduction to Programming	o Algorithm Design and Analysis A
o Introduction to Data Structures	o Algorithm Design and Analysis B
o Discrete Mathematics	o Artificial Intelligence

TECHNICAL SKILLS

- o **Programming:** Python, C++, R, MATLAB , SQL
- o **Libraries:** PyTorch, TensorFlow, Transformers, NLTK, OpenCV, NumPy, Pandas
- o **Cloud and Big Data:** AWS, Terraform

EXPERIENCE

Tixr   May 2023 – Present
Applied ML Scientist   *Santa Monica, CA*

- o Spearhead research, development, and deployment of generative AI applications via fine tuning of foundational models on enterprise data.
- o Lead development of trustworthy LLM powered customer chatbot and marketing assistants, with an emphasis on mitigating hallucinations and enhancing robustness.

Amazon   June 2022 – Sep 2022
Data Science Intern   *Seattle, WA*

- o Implemented a time series clustering algorithm to identify two patterns in device sales.
- o Worked with time series transformers and regression analysis to develop classification + signal translation pipeline, **reducing forecast model error by 5.5 weighted mean absolute percentage error points**.
- o Informed data driven business decisions on promotion pricing and optimal length.

Pyxeda.ai   June 2020 – Mar 2021
Machine Learning Research Engineer Intern   *San Jose, CA*

- o Developed anomaly detection model trained on Google Cloud log files, achieving **0.76 F1 score**.
- o Trained and deployed object detection models in AWS with API endpoints for customer use.

UC Davis   Jan 2019 – June 2021
Machine Learning Researcher   *Davis, CA*

- o Conducted paid research at 3 labs with a focus on computer vision.
- o <u>Plant AI Lab</u>: Developed synthetic image generation pipeline. Trained an **instance segmentation model** on 100+ synthetic images and finetuned on **10 real images**. Resulting model achieved **accuracy of 71%**, beating existing model trained on 150+ real images.
- o <u>Computational RNA Lab</u>: Developed Random Forrest Classifier to identify nucleotide reactivity. Improved average precision of existing model by **20%**.
- o <u>MiNi Lab</u>: Developed object detection model for chemical identification in lab setting. Integrated model output with API to achieve liquid handling via robotic automation.

PATENTS & PUBLICATIONS

- o "Microfluidic cap-to-dispense (cd): a universal microfluidic robotic interface for automated pipette-free high- precision liquid handling", Lab Chip 19 (2019), 3405– 3415.
- o Accurate detection of RNA stem-loops in structurome data reveals widespread association with protein binding sites. RNA Biol. 2021 Oct 4:1-16. doi: 10.1080/15476286.2021.1971382.
- o "Enlisting 3D Crop Models and GANs for More Data Efficient and Generalizable Fruit Detection." 1269-1277. 10.1109/ICCVW54120.2021.00147.\
- o Deshpande, K. (2023). "Comparing Adversarial Unsupervised Domain Adaptation to Zero-Shot Classification in Contrastive Language-Image Pre-Training Embedding Space". ProQuest ID: Deshpande_ucla_0031N_21970. Merritt ID: ark:/13030/m5t233x0. Retrieved from https://escholarship.org/uc/item/7p7205rt