Kaustubh Deshpande

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EDUCATION

University of California, Los Angeles **Sep 2021 – Mar 2022**
M.S. Applied Statistics *Los Angeles, CA*

Courses Completed:

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

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

Courses Completed

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

TECHNICAL SKILLS

- **Programming:** Python, R, SQL, MATLAB, PySpark, Git, Linux
- **Libraries:** NumPy, Pandas, SciPy, SciKit, PyTorch, TensorFlow, Keras, OpenCV

EXPERIENCE

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

- Implemented a time series clustering algorithm to identify two patterns in device sales.
- Developed and implemented a classification + signal translation pipeline that reduced error in existing forecasting model by 5.5 weighted MAPE percentage points.
- Technologies: Python, Scikit-Learn, SQL, Pytorch,

Pyxeda.ai **June 2020 – Mar 2021**
Software Development Intern *San Jose, CA*

- Developed and deployed image classification models in AWS and GCP with REST endpoints.
- Technologies: Python, SQL, SageMaker, Google AI platform, TensorFlow, Keras, Pytorch

Plant AI Lab – UC Davis **Jan 2020 – June 2021**
Computer Vision Researcher *Davis, CA*

- Developed a python API that allows user to generate synthetic images with custom parameters.
- Developed a pipeline running training and inference with a Mask R-CNN model.
- Final model, trained solely on synthetic data, achieved an R^2 value of 0.46 when comparing ground truth vs predicted instances.
- Technologies: C++, Python, Linux, Git, anaconda, Mask-RCNN, Pytorch, NumPy, OpenCV, Sci-kit

Computational RNA Lab - UC Davis (unpaid) **Dec 2019 –June 2021**
Machine Learning Researcher *Davis, CA*

- Conducted feature engineering and implemented binary classification into existing pattern recognition software which improved average precision of nucleotide scoring by 20%.
- Technologies: NumPy, Biopython, Sci-Kit, Pandas, Python.

MiNi Lab – UC Davis (unpaid) **Jan 2019 – Nov 2019**
Computer Vision Researcher *Davis, CA*

- Developed computer vision software to identify chemical vials and achieve liquid handling using robotic automation in a laboratory setting.
- Technologies: Python, OpenCV, DOBOT Magician API, Arduino micro-controller.

PATENTS & PUBLICATIONS

- "Microfluidic cap-to-dispense (cd): a universal microfluidic robotic interface for automated pipette- free high- precision liquid handling", Lab Chip 19 (2019), 3405– 3415.
- 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.
- "Enlisting 3D Crop Models and GANs for More Data Efficient and Generalizable Fruit Detection." 1269-1277. 10.1109/ICCVW54120.2021.00147.