Kaustubh Deshpande

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EDUCATION

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

Courses Completed: *(By Spring 2022)*

- 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
- **Tools:** Linux, Git, Visual Studio Code, PySpark
- **Libraries:** NumPy, Pandas, SciPy, SciKit, PyTorch, TensorFlow, Keras, OpenCV

EXPERIENCE

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

- Developed multiple image classification pipelines in AWS and GCP with REST endpoints to allow clients to send requests.
- 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 that transfers and formats the generated images into a Mask R-CNN model for training and inference.
- Final model achieved an R^2 value of 0.46 when training solely on synthetic data.
- 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 models into PATTERNA, an existing unsupervised pattern recognition algorithm that mines for RNA structure motifs.
- Implementation led to an 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.