

# Vishakh Rama Pillai

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## EDUCATION

### Masters of Information and Data Science (MIDS)

UC Berkeley

Expected August 2022

GPA: 3.83/4.0

### Bachelor of Science in Chemical and Biomolecular Engineering

UC Berkeley

August 2015 – May 2019

GPA: 3.43/4.0

## PROJECTS

### Leopard Re-Identification Capstone

May 2022—Present

- Created a YOLOv5 model for leopards and 20% negative samples with 0.88 mean average precision @ 0.5:0.95 IoU
- Formulated a classification algorithm for unique leopards using extracted embeddings via triplet loss and a pretrained CNN model with a cross-validation accuracy of 87%

### Multi-Label Image Classification

March 2022—April 2022

- Developed an 85% accurate model for 20 animals utilizing feature extraction via a pretrained CNN ResNet model
- Executed dimensionality reduction using PCA and tSNE methods providing visualizations to evaluate feature performance

### Automated Essay Scoring

May 2021—August 2021

- Formulated a competitive two-stage learning framework of 74% accuracy across all prompts with adversarial essay detection and ranked coherence, semantic, and prompt-relevant scores using BERT based models and relevant literature
- Engineered a clique-based coherence model using BERT's sentence pairing feature to capture coherence of longer passages

### Forest Cover Prediction

February 2021—April 2021

- Designed a hybrid random forest prediction model with 91.1% accuracy on validation data and a 5 second execution time
- Performed EDA highlighting key differences between cover types across explanatory variables

## SKILLS

- Python, R, Java, SQL, Pytorch, Tensorflow, YOLO Detection, Transformers, CNN/RNN
- Data modeling and evaluation, regression, classification, supervised/unsupervised learning, NLP, time-series forecasting

## EXPERIENCE

### Intel Corporation

July 2019 —Present

#### Yield Analysis Engineer

Chandler, AZ

- Directed as 14nm/22nm team lead for Wet Etch defects through providing strategical insight for process risk and developing tactical preventative maintenance plans, which results in a yield impact savings of over \$150K weekly
- Provided yield degradation signals through time series, probability plot, and tool parameter analysis via Python and JMP
- Formulated a novel machine learning time series prediction prototype using a CNN and LSTM neural network architecture
- Streamlined tactical plans for managers and engineers by creating customized daily automated reports using Python and SQL, saving 10 hours of engineering labor weekly

### Nuphoton Technologies

June 2018—August 2018

#### Research Analyst Intern

Murrieta, CA

- Presented research to executives of the latest technological developments and market insights in fiber optics
- Composed a report on the FDA process to market the photodynamic therapy (PDT) laser as a clinical medical service

### Vinivish Technologies

May 2017—August 2017

#### LabVIEW Software Engineering Intern

Trivandrum, Kerala, India

- Optimized the performance of a Raman medical device by integrating a peak-finding algorithm in LabVIEW
- Developed graphic user interfaces to better equip customers to examine their purchased amplifiers