# Ananya Deepak Deoghare

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## Education

**University of California, Los Angeles(UCLA)** Expected Mar 2023
MS in Electrical and Computer Engineering [GPA: 4.0/4.0] *Los Angeles, CA*

**PES University** Aug 2015 - Aug 2019
BTech in Electronics and Communication Engineering *Bangalore, India*

- **Eyantra 2016 Robotics Competition** - Coached a team of 3 students to the semi-finals in a National Level Robotics Competition where I successfully managed and delegated tasks to ensure that the team met all deadlines. The robot performed navigation tasks and we build an arm for the robot to pick up objects.

## Technical Skills

- **Tools and Languages:**
  Git, Python, MATLAB, C, C++, Java, SQL, Pandas, Scikit-learn, scipy, Tensorflow, Pytorch, Scilab, Visual Studio
- **Statistics/Machine Learning:**
  Statistical Analysis, Data Mining, Data Visualization, Image and Video Processing, Computer Vision, Clustering and Classification, Deep Learning, Feature Extraction, Signal processing
- **Instruments:**
  Oscilloscope, Arduino, Raspberry Pi, Firebird robot

## Experience

**Teaching Assistant** Mar 2022 – Present
University of California, Los Angeles(UCLA) *Los Angeles, CA*

- TA for the course Food Politics in the World of Arts and Culture/Dance Department and for the course Mathematics for Life Scientists in the Life Sciences Department.
- Organized and oversaw 2 discussion sections and 2 lab sessions for a course of 30 students, where I guided students to get familiar with mathematical modeling in Python.
- Assisted faculty with preparations for the course, including grading and providing feedback on student assignments.

**Engineering Intern** Jun 2022 – Sep 2022
VidMob *New York, NY*

- Created a series of AI algorithms to score video and image data for ad engagement, increasing the insights by 25%.
- Tested new methods for online advertisement engagement, resulting in a 5% boost in overall client satisfaction.
- Worked as part of a team to design various AI algorithms and worked on Full stack development, improving team efficiency by 15%.

**Student Researcher** Jul 2020 – Present
University of California, Los Angeles(UCLA) *Los Angeles, CA*

- Wrote 2 chapters for a book on Computational Imaging, which was published by MIT Press.
- Derived a novel and optimal Shift Robust Loss Function for rPPG with a fellow peer, resulting in decreased error by 40%.

- Worked with team to diagnose skin-tone bias in the medical application using multimodal fusion between radar and RBG data[1]. As a result, the team was able to develop an algorithm that improved accuracy by 75%.

**Software Engineer & Data Analyst** Jun 2019 – Jul 2021
Accenture *Bangalore, India*

- Qualified in the Semi-finals of the Global Innovation Challenge held by Accenture.
- Worked as a customer interface.
- Operated various BI tools to represent monthly and weekly effectiveness of resources for the client helped increase productivity by 15%.
- Successfully trained 10 new engineering graduates on the work done in the team, helping them get familiar with the work and contributing to their success.
- Created weekly data trends for the pharmaceutical client leading to insights backed by data for drug sales performance monitoring. The end result was an increase in competitor match rate by 20%. This also led to appreciation from the Australian team.

**Research Intern** Jan 2019 – Jun 2019
Artificial Intelligence and Robotics Lab *Indian Institute of Science, India*

- Worked under Dr.Sundaram to detect Autism using fMRI Scans and Deep Neural Networks, providing pioneering work in early detection and better treatment.
- Successfully cleaned and rearranged ABIDE Dataset (depending on the correlation between different regions of the brain) to improve data correlation, leading to more accurate predictions.
- Implemented various CNNs on the cleaned data, resulting in an overall accuracy of 80%.

## Projects

- **Detecting Pulse from Head Movement:** I replicated the paper "Detecting Pulse from Head Movement" by Guha Balakrishnan, Fredo Durand, John Guttag.The code was able to detect the Heartbeat with an error of around 2-5%. The code was done in Python and it took around 2.5 weeks to complete
- **Automatic Garbage Segregator:**
  - Engineered a crane that could segregate waste into biodegradable, non-biodegradable, and electronic waste with an accuracy of 95.18%.
  - Tested various Feature Extraction techniques like PCA, LDR, and Convolutional Neural Networks.
- **Machine Learning Final Project:** Support Vector Machine using Gaussian Radial Basis Function Kernel and Back Propagation Algorithm was performed on Caltech-256 Dataset. We obtained a very low accuracy and all the coding was done on MATLAB and Python.

## Publication

**SIGGRAPH 2022** Blending camera and 77 GHz radar sensing for equitable, robust plethysmography

## Extracurricular Activities

- I am a professional Bharatnatyam Dancer and was in the top 50 in the Senior exam.
- Heavily participated in **IEEE Symposium Series on Computational Intelligence** held in Bangalore, presenting research and contributing to discussions.
- Member of the **Centre of Intelligent Systems** (a research center) at PES University, where I conducted research and collaborated with other members.
- Co-ran the Operations team for Epsilon 2016, a science fest that saw over 100 events and 2000 participants.