# ELVIN JOHNSON

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## EDUCATION

**Carnegie Mellon University** — **Pittsburgh, PA**
Master of Science in Electrical and Computer Engineering - Applied Program — **Fall 2022**

**Veermata Jijabai Technological Institute (VJTI)** — **Mumbai, India**
Bachelor of Technology in Electronics with *Distinction [3rd rank in dept.]* — **May 2020**
GPA 9.04/10

## PROFESSIONAL EXPERIENCE

**Protiviti India** — **Mumbai, India**
*Intern (Data & Analytics)* — **August 2020 - December 2020**

- Collaborated with the data science team to identify relevant use cases for image analytics in retail; initiated work on building solutions for them, and published a white paper on 'Image Analytics in Retail'
- Executed truck load optimization (logistics) and automation for a client with the team, thus, achieving significant cost saving
- Performed vendor performance assessment for logistics, in collaboration with the data science team
- Developed an end-to-end solution for signature extraction, where a ML model was trained to identify, extract signatures from an input document; built a local web app for deploying it for the client

**Veermata Jijabai Technological Institute** — **Mumbai, India**
*Project Intern (Machine Learning)* — **May 2019 - June 2019**

- Performed detection and classification of skin cancer (images) by leveraging ML to classify skin lesions as benign/malignant and further into one of seven types of lesions
- Incorporated architectures such as Resnet50, InceptionV3 etc, in models; employed fine tuning, added custom layers to train models and attained an accuracy of **89%** for the model that identified lesions as benign/malignant and **85%** for the model involved in classifying lesions further

## ACADEMIC AND GROUP PROJECTS

**Veermata Jijabai Technological Institute** — **Mumbai, India**
**Crawl Bot** (**Finalist in Smart India Hackathon 2020)** — **July 2020**

- Managed model building and trained various NLP models for blacklisting/classifying websites promoting child abuse, cyber bullying based on textual content outputted by crawling, and obtained an overall classification accuracy of 95%

**Deep Fake Detection in Videos using Machine Learning** — **August 2019 - May 2020**

- Processed and cleaned about 1 million frames from deep fake videos by Facebook, Faceforensics, Google for building a dataset
- Developed a method to detect deep fakes via Transfer learning, CNNs and attained an accuracy of 90% on the test set
- Conducted training, processing of ML models on the Nvidia DGX-1 AI Supercomputer and also finished amongst the top 15% in Kaggle's 'Deep Fake detection Challenge' by Facebook
- Presented and published findings as **'**Suratkar Shraddha, Elvin Johnson, Karan Variyambat, Mihir Panchal, and Faruk Kazi. "Employing Transfer-Learning based CNN architectures to Enhance the Generalizability of Deep fake Detection." In *2020 11th International Conference on Computing, Communication and Networking Technologies (ICCCNT)*, pp. 1-9. IEEE, 2020'

**Estimating the Productive Life of Machine Bearings** — **December 2018 - January 2019**

- Applied machine learning to analyse data of bearings of a machine to predict its remaining life, given data pertaining to values of its acceleration under different working conditions
- Extracted 4-5 features such as mean, skewness, kurtosis etc from given data and trained a model by leveraging ML algorithms to predict the remaining lifetime of the bearings whose acceleration data was truncated midway

**Smart Security System** — **June 2018 - July 2018**

- Devised a system to authenticate people at the door of one's house without any physical efforts
- Trained a model by utilizing Dlib (deep learning library) to detect and learn faces of members in a family
- Enhanced security by incorporating a feature to click a photo and having it sent to the owner on detecting a non-registered faces via an automated email

**The Eyewriter (Society of Robotics and Automation)** — **May 2017 - July 2017**

- Designed a wearable to control the cursor of a computer via eye movements for ALS patients; implemented blink controlled clicks
- Accomplished tracking and extraction of one's pupil via a camera, by implementing computer vision

## SKILLS

- Programming languages: Python, SQLite, C, C++
- Frameworks/Libraries: Pytorch, Pandas, ScikitLearn, Keras, Matplotlib, Tensorflow, Opencv
- Web Technologies: Basics of Javascript, MongoDB, HTML, CSS

## ACHIEVEMENTS/ACTIVITIES

- Recipient of KC Mahindra Higher Education Scholarship
- Member of Society of Robotics & Automation; was involved in managing and organizing workshops, developing innovative projects