SWAPNIL TANEJA

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Education

UC San Diego – MS, Computer Science, **(GPA – 3.67)** (Sep '16 – Dec '17)

❍Tata Scholar – Awarded Scholarship for higher education among 50000 applicants in 2016.

Indian Institute of Technology, Roorkee - B. Tech, Electrical Engineering, **(CGPA – 8.8/10)** (Jul '10 – May '14)

❍Secured JEE (Joint Entrance Examination) Rank – 1601 among 460,000 candidates in 2010

Work Experience

Twitter , Intern – Recommendation (Jun '17- Sep '17)

❍ Worked on detecting the Topics of interest for the users to recommend tweets. **Scala, Scalding, Pants, Hadoop**
Impact: Achieved top-K precision of 85% for recommending Hashtags to users.

Oracle, Software Engineer (Jun '14 – Aug '16)

❍ Built a tool called **Log Miner** to predict the cause of logged errors using Machine Learning algorithms. Got featured in Oracle Social Network for leveraging IEEE research – **Java, KNN** and **decision trees**.
Impact: Achieved an **accuracy of 90%,** significantly reducing the time for parsing logs and debugging.

❍ Wrote Life Cycle Management Read APIs using Introspection and Topology manager APIs - **Java**

Hewlett Packard Education Services, Brand Ambassador, Intern (Jun '13 - Jul '13 & May '12 - Jun '12)

❍ Developed a website prototype for airline reservation. The task was to implement and test a scheduler for flights from different aerodromes preventing clashes - **Asp.Net, C#, SQL Server**

❍ Built a computer controlled robot with an ability to never fall off the table - **Atmega 16 AVR, IR Sensors**.

Technical Skills

Languages/Framework - Java, Scala, Scalding, C++, Python, MySQL, Android, XML, HTML, CSS, Junit, C#

Platform/Software/Tools – Linux, MacOS, Pants, Hadoop, Matlab, Antlr4, SQL Server, Android Studio, ANT, Gradle, OpenCV, Git

Projects and Research

Sign and Link Prediction on Signed Social Networks – Graph Mining (June '17)

❍ Built models and extracted features such as Jaccard's Similarity, Social Imbalance, User's reputation, Community Detection and Restricted Boltzmann Machines on Slashdot Dataset. [Report] **ML, Python**
Impact: Achieved 91 % F1 score for link prediction and 85.9 % for sign prediction accuracy.

Text to image Synthesis using GANs (March '17)

❍ Used a GAN model to generate artificial flower images from Flower Dataset & number images from MNIST & hand-crafted Dataset – **Python, Tensorflow .** Tested our hypothesis that GAN is generalizable and portable to other datasets. [Report]

Improving Recall using features of CNN (March '17)

❍ Improved Recall of image similarity search using internal representations of CNNs-**Python, Matlab.** [Survey]
Impact: Improved the average recall from 0.56 to 0.79 using CNN features.

Generating Music using RNNs, Transfer Learning using VGG16 – CNN (Feb '17)

❍ Generated melodious music using a RNN model trained on ABC notation-**Python** [Report]

❍ Trained the last softmax layer on Caltech 256 and utilized the existing VGG16 model parameters for image classification. [Report]

Capacitive fabric touch controlled Sphero SPRK+ – Healthcare Robotics (June '17)

❍ Built a system to assist growth of infants with hardware restrictions. Kids with hardware restrictions may face flat head syndrome if they do not receive plenty tummy time. This system acts as a playmat for them and captures their attention preventing this. [Demo] [Demo] [Report] [Code] **Java, Android, Arduino**

Designing & Building Humanoid Robot (Bachelor's Thesis) (Aug '13- Mar '14)

❍ Built a humanoid robot having – Locomotion on Wheels, Hand Shake and Face Tracking –DC Motors (wheels) and Servo Motors (face). **Haar Cascade Classifiers (Open CV), Arduino Uno – Atmega 16 AVR**. [Report] [Videos]
Impact: Achieved a 95% facial distinction while ensuring security of the lab.

One Eyed Robot, Tech Fest Shristi (Jul '13 - Aug '13)

❍ Implemented facial recognition for passersby on a Webcam mounted on two servo motors tracking the face of human. Used **OpenCV** and **Arduino Uno** for controlled motion of webcam in the 3 degrees of freedom.