SWAPNIL TANEJA

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Education

UC San Diego – MS, Computer Science, Research Assistant - AI **(GPA – 3.7/4)** (Sep '16 – Jun '18)

❍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

Snowflake Computing, Software Engineer - **Services, Warehouse** (Jun'18 - present)

❍ Designed and built a mechanism for cost control in trial accounts using Resource Monitors
Impact: Saved 10K $ per month. **Java**

❍ Created a distributed notification message framework to monitor parameter updates. **Java, Python**

❍ Worked on Resource Monitor recurrence model and optimized performance of services. **Java**

❍ Optimized the Lambda function and reduced the execution time from 1 minute to 20 seconds to handle 100K messages per hour. **Python**

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

❍ Worked on detecting the Topics of interest for the users to recommend tweets. **Scala, Scalding, Pants**
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, Python, Scala, Ocaml, Prolog, C++, SQL, Android, XML, HTML, CSS, C#

Misc. Tools – Git, Svn, Matlab, Antlr4, SQL Server, Android Studio, ANT, Gradle

Projects and Research

Controlling motion of the ball – Reinforcement Learning (Jan'18 – Jul'18)

❍ Researched RL algorithms for benchmarking Control Problems. Wrote a Q learning algorithm for Obstacle training. **Gazebo, Python, ROS** [Link]

SAT Solver – Automated Reasoning in AI (Dec '17)

❍ Wrote a custom SAT Solver by implementing DPLL and CDCL algorithms. **C++** [Link]

Stance Detection on News Articles (Dec '17)

❍ Worked on aligning headlines and articles by extracting textual and similarity based features. [Report]
Impact: Achieved 92% accuracy with a SVM classifier and a Multi Layered Perceptron.

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]

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 used the VGG16 model params for image classification. [Report]

XQuery Processor (March '17)

❍ Created and optimized XQuery Processor for executing Xpath 2.0 expressions. – **Antlr 4, Java, XML** [Link]

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.

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. [Demo] [Demo] [Report] [Code] **Java, Android, Arduino**