

# SWAPNIL TANEJA

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## Education

- UC San Diego** – MS, Computer Science, Research Assistant - AI (**GPA – 3.7**) (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 - App Services** (Jun '18 - present)  
○ Created a messaging framework to handle real time distributed load. **Java, 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, 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, Ocaml, Python, Prolog, Scala, C++, SQL, Android, XML, HTML, CSS, C#  
**Misc. Tools** – Git, Svn, Hadoop, Matlab, Antlr4, SQL Server, Android Studio, ANT, Gradle

## Projects and Research

- Controlling motion of the ball – Reinforcement Learning** (Jan'18 -present)  
○ Researching RL algorithms for benchmarking Control problems . Part of AI research group at UCSD.
- 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. [\[Report\]](#)
- 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 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** [\[Link\]](#)
- 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**