

# Pankaj Bhambhani

UMass Amherst Master's CS, 3+ years Work Ex. Seeking Full-Time Roles - Machine Learning, Software Development

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## EDUCATION

**University of Massachusetts Amherst** MS - Computer Science (GPA – 3.95) Expected Graduation – May 2018  
Coursework – Machine Learning, Natural Language Processing, Artificial Intelligence, Reinforcement Learning, Blockchains

**Dhirubhai Ambani Institute of Info & Comm Tech.** Bachelor of Technology 2009-2013  
Coursework: Algorithms, Data Structures, Networks, Databases, Operating Systems, Cryptography, Natural Computing

## SKILLS

**Languages** – Java, Python, C++, Bash, SQL, JavaScript

**Frameworks** – Spring, Keras, Docker, AngularJS, Android

**Tools** – MySQL, AWS, MATLAB, Redis, Git

## PROFESSIONAL EXPERIENCE

**Play Games 24x7 Pvt. Ltd.** – Software Engineer (Full-Stack) for RummyCircle Jul 2013 - May 2016

- Scaled and optimized distributed in-memory caches using **Ehcache** and **Redis**, also optimized gameplay bot.
- Built RESTful Web Services using **Spring**, Strengthened application security using **Spring-Security**.
- **Technologies** – Java, Spring, Redis, MySQL, Bash, Test-NG

**Machine Learning for Data Science (MLDS) Lab** – Software Developer for Dark Ecology Project May 2017 - Present

- Scaled the existing learning models to run on large volumes of data, which identify patterns in bird migrations.
- Plans include Analyzing the results and Generating plots to better understand bird behavior during migration.
- **Technologies** – MATLAB, AWS S3, AWS Batch, Docker, Python. See [darkecology.cs.umass.edu](https://darkecology.cs.umass.edu)

**K-Desktop Environment (KDE)** – Software Developer for Choqok May - August 2012

- Integrated Facebook support for users of KDE's desktop client, Choqok.
- Built a base library which allows users to create, view, like and comment on posts
- **Technologies** – Qt, C++. See [github.com/pankajb64/choqok-facebook](https://github.com/pankajb64/choqok-facebook)

## RESEARCH EXPERIENCE

**Detecting Swallow Roosts using Deep Learning** – Research Assistant with MLDS Lab Sep 2017 - Present

- Machine-Learning based tools to help biologists locate swallow roosts in weather image data.
- Contributions include building a benchmark data set and evaluation on large scale data using AWS.
- **Technologies** – MATLAB, Python, AWS S3. See [darkecology.cs.umass.edu](https://darkecology.cs.umass.edu)

## ACADEMIC PROJECTS

**Image Captioning with Visual Attention** – Machine Learning Course Project Oct - Dec 2016

- Analyzed an LSTM-based deep learning model to generate captions given an unseen image.
- Produced visualizations showing what the model is looking at while predicting a word in the caption.
- **Technologies** – Keras, Python. See [github.com/pankajb64/image\\_caption\\_using\\_attention](https://github.com/pankajb64/image_caption_using_attention)

**Conservative Garbage Collector (GC)** – Systems Course Project. **Technologies** – C++ March 2017

- Developed a prototype model that tracks the memory allocated and collects unreferenced objects.
- Tested it on real world applications such as **Firefox** and **vim** with no crashes or performance degradations.

**Memory-based Caching** – Systems Course Project. **Technologies** – C++, Python April 2017

- Implemented a multithreaded server based on **memcached** protocol to store objects in memory instead of database.
- Tried LRU and randomized eviction policies and tested with object sizes of **upto 2 GB** with high performance.

**Pictionary with Jibo** – HackUMass 2016 Oct 2016

- Trained Jibo a social robot, to play Pictionary using Tensorflow's Image Recognition models and simple line-drawing images, with over 80% accuracy for common objects such as house, chair, etc.
- **Technologies** – TensorFlow, Jibo SDK, OpenCV, Python. See [github.com/pankajb64/jibo-pictionary](https://github.com/pankajb64/jibo-pictionary)