Pankaj Bhambhani

UMass Amherst CS Graduate, 3 years of Experience. Seeking Full-Time Roles - Machine Learning or Software Development

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Skills – Java, Python, Keras, Tensorflow, Docker, AWS, MATLAB, Bash, MySQL, Node.js, C++, Spring, Hadoop, Redis, AngularJS

Experience

Machine Learning for Data Science (MLDS) Lab – Software Developer (May 2017 to Present)

- Involved in the Dark Ecology project, uses image recognition to identify bird migration patterns from radar image data.
- Scaled the service to run on AWS, using a Docker image built to execute batches of radar data stored in Amazon S3.
- **Technologies** – **MATLAB, AWS S3, AWS Batch, Docker, Python.**

Play Games 24x7 Pvt. Ltd. - Software Development Engineer (July 2013 - May 2016 – 2 years 10 months)

- Involved in Full Stack Web Development of RummyCircle, a major platform providing **Rummy**, a popular card game.
- **Accomplishments** - Horizontal scaling and optimization of distributed caches, Building Restful Web Services, Strengthening application security using Spring Security, and optimization of gameplay bot.
- **Technologies** - **Java, Spring, Jersey, Hbase, Ehcache, Terracotta, Redis, Akka, MySql, Bash, MyBatis, Node.js, Test-NG.**

KDE (Google Summer of Code 2012 & Season of KDE 2011) - Software Developer (May-July 2011 & May – Aug. 2012 – 7 months)

- Provided support for using Facebook with KDE's micro blogging client, Choqok.
- Helped built the base library LibKFBAPI, allowing user to create a post, view posts as well as like and comment on a post.
- Technologies: **KDE4** based on Qt (C++ based GUI Framework). **Link** - https://github.com/pankajb64/choqok-facebook

Research Experience

Detecting Swallow Roosts in Weather Radar using Deep Learning – Masters Project (Sept. 2017 – Present)

- Currently involved with MLDS Lab in building Faster R-CNN based models to detect swallow roosts in weather image data.
- Plans include building a benchmark data set, fine-tuning different models and evaluating at scale using AWS.
- **Technologies – MATLAB, Python, AWS S3**

Evaluating Machine Learning Techniques for Website Fingerprinting (WF) Attacks – Independent Study (May – Aug. 2017)

- Evaluated different machine learning models (Naïve Bayes, KNN and SVM) for targeting WF attacks on the Tor network.
- **Proposed two neural network models** (a 2-layer net and a 1D CNN) to effectively classify multi-tab, open-world, time-variant crawl data, and evaluated their performance against the state-of-the-art SVMs, with promising results.
- **Technologies – Keras, Numpy, Sk-learn, Python, C++, Bash. Link -** https://github.com/pankajb64/wf_attacks_evaluation

Academic Projects

Image Captioning with Visual Attention - Machine Learning Course Project (October – December 2016)

- Evaluated a deep learning model (CNN+LSTM with visual attention) to generate image descriptions given an unseen image.
- Results showed that the model can learn to produce good image captions and generate visualizations to infer how a model can focus on certain parts of the image while predicting the next word.
- **Technologies: Keras, Theano, Python. Link** - https://github.com/pankajb64/image_caption_using_attention

Pictionary with Jibo - HackUMass 2016 (October 2016)

- Taught Jibo, a social robot to play Pictionary, using out of the box Tensorflow models and simple line-drawing images.
- Used TensorFlow's Image Recognition Algorithm, it could successfully recognize common objects such as house, chair, etc.
- **Technologies: TensorFlow, Jibo SDK, OpenCV, Python. Link -** https://github.com/pankajb64/jibo-pictionary

Education

University of Massachusetts Amherst MS - Computer Science (GPA – 3.95) (September 2016 – PRESENT)
Relevant Coursework – Machine Learning, Natural Language Processing, Artificial Intelligence, Reinforcement Learning, Systems

DA-IICT B.Tech. - Information & Comm. Technology (2009-2013)
Relevant Coursework: Algorithms, Data Structures, Computer Networks, Databases, Operating Systems, Cryptography, Graph Theory, Natural Computing