Manu Singh

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Education

Indiana University Bloomington Aug`14 – May`16
M.S. in Computer Science (Master Thesis Track | Advisor David Crandall) **GPA: 4.0/4.0**
Relevant Courses: Data Mining (A+), Vision for Intelligent Robot (A+),
Image Processing & Recognition (A), Algorithms Design (A+), Statistical Learning (A)

College of Engineering, Roorkee Aug`06 – May`10
B.Tech in Electronics Engineering **GPA: 3.7/4.0**

Research

Computer Vision Lab | Research Assistant Jan`16 – May`16
- Researched on improving geolocation in large scale unconstrained social images.
- Developed deep learning models which combine visual and textual data. [Poster]

Experience

IBM Watson Health | Cognitive Software Engineer Jun`16 – Present
- Developing API Platform to enable micro services in Watson Health cloud.

Sears Holding | Software Development Intern May`15 – Dec`15
- Developed an intelligent computer vision application to make retails stores innovative by enabling Visual Search and monitoring check out queues at store.
- Build an indoor location based services platform for information exchange using beacons.

Toshiba Software R&D | Software Engineer Dec`12 – Jun`14
- Developed Toshiba Cloud Orchestration and Automation Platform for on demand/workflow driven customer virtual desktop creation (VM Provisioning, Storage Provisioning and Application Provisioning)

Projects

Tag selection and propagation method for large scale social image classification Aug`15 – May`16
- Proposed enhancements that can help to improve the selection of annotated text (tags) in images and assist the visual features to build powerful machine recognition models.
- Achieved an average 1.5% improved accuracy and a seven times faster system. [Report]

Bird & Squirrel Alert System *(Object Recognition & Localization)* Jan`15 – May`15
- Developed an Object Oriented alert system in C++ to detect & locate birds & squirrels on a birdfeeder from video. [Demo]
- Improved the detection accuracy by including motion detection and optical flow information.

Kaggle Microsoft Supervised Malware Classification *(Machine Learning)* Jan`15 – May`15
- Developed a classification model on 500 gigabytes of malware programs (source code) using Extreme Gradient Boosting & Random forest. Achieved a log-loss of 0.0625.
- Extracted features based on byte 4-grams frequency and instruction count. [Report]

Skills

Languages & Technologies: Java, Python, Caffe, R, C++, REST, Spring, Hibernate, JUnit, Git
Libraries: OpenCV, Caffe, Sklearn, Theano, Tensorflow, NumPy, Pandas.

Teaching Experience

Associate Instructor – Introduction to Programming, Indiana University, Fall '14
Associate Instructor – Introduction to Programming, Indiana University, Spring '15
Associate Instructor – Computer Vision, Indiana University, Spring '16

Awards

First Prize, Raspberry pie 48-hour Hackathon: Build a digit recognition system with 99% accuracy on dataset of ~10000 digits. Held at Sears amongst all intern groups in summer of 2015.