**Sumit Gupta** Email: [sumit743@gmail.com](mailto:sumit743@gmail.com)

Bloomington IN 47404 Website: <http://gsumit.com>

**Education**

**Indiana University Bloomington**  *Bloomington, Indiana*

*Master of Science in Computer Science (GPA: 3.82) May 2016*

*Thesis: Convolutional Neural Networks for Infrared, Fine-Grained, and Egocentric Scene Classification*

**Dhirubhai Ambani Institute of Information and Communication Technology** *Gandhinagar, India*

*Bachelor of Technology in Computer Science May 2010*

**Technical Skills**

**Languages & Technologies:** C++, Python, CUDA, Java/J2EE, R, MATLAB, Octave, C, SQL, Linux, Git.

**Libraries:** OpenCV, scikit-learn, TensorFlow, Caffe, Torch, Theano, NumPy, Pandas.

**Work Experience**

**Research Intern** *(Computer Vision / Machine Learning) May 2015 – July 2015*

*Indiana University Bloomington* *Bloomington, Indiana*

* Developed & Applied machine learning techniques to images in Infrared spectrum for **pedestrian recognition**.
* Trained **Deep Learning** based model on first-person images with text to automatically generate image captions.

**Associate Instructor** *Aug. 2014 – May 2016*

*Indiana University Bloomington* *Bloomington, Indiana*

* Taught graduate level Computer Vision and Elements of Artificial Intelligence courses.
* Designed labs, projects, and assignments. Reviewed and critiqued student submissions.

**Software Engineer (Data)** *Aug. 2010 – Aug. 2014*

*Hewlett-Packard*  *Bangalore, India*

* Developed **machine learning** models for predicting departing customers by processing Churn rate data.
* Designed & developed data processing system capable of **handling several terabytes** per day.
* Implemented ML and ETL algorithms to generate insights by processing **high volume data**.
* Technologies: Machine Learning, Data Processing/Analysis, **Python**, **Java**, SQL.

**Academic Projects (see all:** [**http://gsumit.com/projects**](http://gsumit.com/projects)**)**

**Kaggle Right Whale Recognition** (Computer Vision: Image Classification, Deep Learning) *Nov. 2015*

* Developed models to classify individual whales using **C++, Python** and **deep learning** techniques.
* Extracted features from a Convolutional Neural Network (CNN) and trained an SVM to identify individual whales.
* Fine tuned pre-trained CNN models to Right Whale data and combined different techniques to improve accuracy.

**Bird & Squirrel Alert System** (Computer Vision: Object Recognition & Localization)  *Apr. 2015*

* Developed an Object Oriented alert system in **C++** to detect and locate birds & squirrels on a birdfeeder from video.
* Improved the detection accuracy by using motion detection and optical flow information.

**First-person Scene Classification** (Computer Vision: Image Classification, Deep Learning) *Feb. 2016*

* Trained a multi-label deep learning system to classify images from wearable camera into several categories based on Location, Activities and Objects (like indoor, outdoor, restaurant, eating, driving).
* *Languages & Tools:* **C++**, **Python**, Caffe, scikit-learn.

**Kaggle Microsoft Malware Classification Challenge** (Machine Learning)  *Apr. 2015*

* Designed and trained a classification model on 500 gigabytes of malware source code using Extreme Gradient Boosting & Random forest. Extracted features based on byte 4-grams frequency and instruction count.

**Game Maker & Breakout Application** (Software Development)*Feb. 2015*

* Implemented an **object-oriented** Java application based on MVC architectural pattern to create wide range of stand alone games. Functionality include: previewing the game, saving current instance, assigning actions to sprite etc.
* Developed Breakout game in **Java** using Game Maker with play, pause, replay, undo, save and load game modes.

**Activities and Recognition**

* Selected amongst **top 12 national finalists** in event Re-Kriti 2008 and recognized by NIF (**National Innovation Foundation**, Dept. of Science and Technology, Govt. of India) for **creativity** and **innovativeness**.
* Recognized for *Making a Difference* at Hewlett-Packard for preventing several SLA breaches.