

# ASHOK KUMAR PANT

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## OVERVIEW

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I am a Machine Learning software developer and researcher with comprehensive knowledge on Deep learning and other state of art machine learning techniques. I am a Computer Vision and Natural Language Processing expert having a production level experience on various related problem solving techniques.

## PROFESSIONAL SUMMARY

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- Over **five years of** experience on **computer vision, natural language processing, deep learning** and other **machine learning** technologies.
- Comprehensive knowledge of **pattern recognition** and **data mining**.
- Proficient programmer in **Java, Scala, C++, MATLAB, and Python**.
- Experience in developing **RESTful APIs** in Jersey and Spring Framework.
- Expert in developing **scalable, distributed and cross-language services**.
- Experience in using project management and team collaboration tools such as Basecamp, Jira, Github, Bitbucket and Slack.

## EDUCATION

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| <b>Master of Science, Computer Science</b><br>Tribhuvan University, Kirtipur, Kathmandu, Nepal         | 2012 |
| <b>Bachelor of Science, Computer Science</b><br>Tribhuvan University, Mahendranagar, Kanchanpur, Nepal | 2008 |
| <b>PCL, Physical Science</b><br>Tribhuvan University, Mahendranagar, Kanchanpur, Nepal                 | 2005 |

## TECHNICAL SKILLS

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| <b>Languages:</b>      | Java, Scala, C/C++, MATLAB, Python, Dot.Net, JavaScript, HTML5, CSS3                               |
| <b>ML/DL Tools:</b>    | Weka, Caffe, DL4J, TensorFlow, LibLinear, LibSVM, MLlib, Spark, Mahout, mlpack, DLib, scikit-learn |
| <b>CV Tools:</b>       | OpenCV, DLib, CCV, VLFeat, scikit-image  |
| <b>NLP Tools:</b>      | CoreNLP, OpenNLP, NLTK   |
| <b>IDE/Dev. Tools:</b> | Vim, Sublime, IntelliJ Idea, CLion, WebStorm, PyCharm  |

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| <b>Databases:</b>               | LMDB, LevelDB, MongoDB, MySQL, MsSQL, Oracle |
| <b>Version Controls:</b>        | Github, Bitbucket, Gitlab                    |
| <b>Servers:</b>                 | Apache, Nginx                                |
| <b>Web Dev.:</b>                | Wordpress, Drupal, Meteor                    |
| <b>Serialization/RPC tools:</b> | Thrift, Protocol Buffers                     |
| <b>Misc.:</b>                   | MS Office, Photoshop, Latex, etc.            |

## RESEARCH AND PUBLICATIONS

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1. Acharya S., **Pant AK.**, Gyawali PK., "Deep Learning Based Large Scale Handwritten Devanagari Character Recognition", *9th International Conference on Software, Knowledge, Information Management & Applications*, Kathmandu, Nepal, 15 -17 December 2015.
2. Pant AK., Acharya S., Gyawali PK., "Automatic Nepali Number Plate Recognition with Support Vector Machines", *9th International Conference on Software, Knowledge, Information Management & Applications*, Kathmandu, Nepal, 15 -17 December 2015.
3. Pant AK., Yadav A., "Sentiment Analysis on Nepali Movie Reviews using Machine Learning", *Researcher CAB, A journal for Research and Development*, vol. 1, no. 1, pp. 89-97, 2014.
4. Pant AK., Panday SP., Joshi SR. "Offline Nepali Handwritten Character Recognition Using Multilayer Perceptron and Radial Basis Function Neural Networks", *Third Asian Himalayas International Conference on Internet AH-ICI 2012*, Kathmandu, Nepal, 24 November 2012.

## EXPERIENCE

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### Sr. Machine Learning Software Engineer

iLoop LLC. (<https://iloop.com/>)

Innovisto Pvt. Ltd., Kathmandu, Nepal, Nov 2015 - Present

- Developed smart event calendar system to suggest user preferred time and locations.
- Developed machine learning based collaborative and content based recommendation modules to recommend users, items, places and events.
- Developed machine learning based (next event/next time/next location) prediction modules.
- Developed a system to extract, resolve and normalize times/dates from raw input text using Natural Language Processing.
- Developed an image processing module to crop,resize and enhance images.
- Developed a system to extract event title and classify event type from input text.

**Languages:** Scala/Java (for General Purpose/ Machine Learning / NLP) , C++ (Image processing/ Map processing), Lua/Python (Machine Learning/NLP)

**Libraries/Frameworks:** CoreNLP, OpenNLP, OpenCV, OSRM, DL4J, TensorFlow

### **Sr. Biometrics Software Engineer**

*TekTak Nepal Pvt. Ltd, Kathmandu, Nepal, Oct 2013– Nov 2015*

- Developed face recognition system (detection, alignment, recognition and verification) using deep learning technology using C++, MATLAB(for Research), OpenCV and Caffe.
- Developed a system to write on image with automatic text color using C++ and OpenCV.
- Research and development of new computer vision and machine learning algorithms for object detection and classification.
- Developed collaborative filtering based user recommendation system using Java and Mahout.
- Research and development of video streaming technology using C/C++, FFmpeg and H.264.

### **Image Processing Software Developer**

*Technoessence Pvt.Ltd., Kathmandu, Nepal, Sept 2014– Oct 2015 (Part Time)*

- Developed Fish recognition system (detection, segmentation, alignment and recognition) using C++, OpenCV and Caffe.
- Responsible for the selection of computer vision and machine learning algorithms to achieve the most accurate and efficient recognition system.

### **Software Developer**

*Desognc Nepal Pvt. Ltd, Kathmandu, Nepal, Jun 2011– Sept 2023*

- Developed web based University Marks processing System using Java, JSP, Spring framework and Oracle 10g.
- Designed and Implemented reporting modules using JasperReports.
- Implemented some core modules of Payroll System.
- Conducted a case study on cloud computing based telecommunication system for Nepal Telecom.

## **PROJECTS**

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### **Facial Expression Recognition System (2016)**

Machine Learning(SVM) based human facial expression recognition system that can detect seven basic facial expressions (Angry, Disgust, Fear, Happy, Neutral, Sad and Surprise) and is implemented using C++ and OpenCV.

### **Face Recognition System (2016)**

Deep Learning based large Scale face recognition and verification system. It includes face detection, 2D alignment and tracking.

**Tools:** C++, Python, Caffe, OpenCV, Dlib, TLD.

### **Face Detection Naked (2016)**

OpenCV haar-cascade based face detection is naked for it's internal stages.  
(link: <https://github.com/ashokpant/detection-naked>)

### **Large Scale Data Clustering System (2016)**

Implemented various data clustering algorithms (EM, K-Means, XMeans,

DBSCAN, Hierarchical) to cluster large scale Insurance data using Java and Weka.

**Information Retrieval System (2014)**

Information retrieval from web-links, text documents using Java and Jsoup.

**Nepali Text Summarization System (2014)**

Sentence extraction based Nepali document summarization system implemented using Java.

**Nepali Document Classification System (2013)**

Machine learning (Naive Bayes and ANN) based multi-class(business, crime, education, health, sport) nepali document classification system implemented using Java.

**Nepali Named Entity Recognition System (2013)**

Machine Learning (SVM) based Nepali Named Entity(Person, Location, Organization, Misc.) Recognition system implemented using Java.

**Graph Coloring System (2013)**

Graph coloring system is a vertex coloring system with the constraints that no adjacent vertices share common colors. This system is implemented using MATLAB.

**Nepali Handwritten Character Recognition System (2012)**

Machine learning(ANN) based Devanagari character (consonants -36, vowels-12 and numerals-10) recognition system implemented using MATLAB.