



The Ultimate guide to AI, Data Science & Machine Learning, Articles, Cheatsheets and Tutorials ALL in one place



Vipul Patel

Chief Data Scientist at SAP | Council Member, Expert Panel at Forbes Technology Council



This is a carefully curated compendium of articles & tutorials covering all things AI, Data Science & Machine Learning for the beginner to advanced practitioner. I will be periodically updating this document with popular topics from time to time. My hope is that you find something of use and/or the content will generate ideas for you to pursue.

How to Articles: (downloadable pdf's)

Fundamentals

- [How to Get a Data Science Internship](#)
- [Getting Your First Data Science Job](#)
- [END-to-END Technical Strategy for AI Engineers \(118 Pages\)](#)
- [Top 40 Python Interview Questions & Answers \(7 pages\)](#)
- [Difference between Business Intelligence & Data Science](#)
- [An example jupyter machine learning notebook](#)
- [A Practical Introduction to Prescriptive Analytics \(with Case Study in R\)](#)
- [DATA FALLACIES TO AVOID](#)
- [Correlation vs Causation: Definition, Differences, and Examples \(6 pages\)](#)
- [Machine Learning ALGORITHMS Mindmap.](#)
- [Which machine learning algorithm to use?](#)
- [Advantages Drawbacks Applications of TOP 10 algorithms \(23 pages\)](#)
- [How companies really leverage big data to drive performance \(32 pages\)](#)
- [Looking for DATASETS.](#)
- [These Are The Best Free Open Data Sources Anyone Can Use](#)

Data Wrangling & Feature Engineering

- [Step by Step Guide to Data Cleaning with Python \(NumPy and Pandas\)](#)
- [Feature Engineering - Getting most out of data for predictive models \(76 slides\)](#)
- [The Hitchhiker's Guide to Feature Extraction \(20 pages\) Python](#)
- [Extracting Features from Text - A Step-by-Step NLP Guide to Learn ELMo Python](#)
- [Handling imbalanced datasets in machine learning \(21 pages\)](#)

Dimension Reduction

- [The Ultimate Guide to 12 Dimension Reduction Techniques \(20 pages\) Python](#)

NLP - Natural Language Processing - Text Analysis

- [Practical Introduction to Web Scraping in Python](#)
- [A Step-by-Step Guide for Building a Tweet Classifier with Python - \(14 pages\)](#)
- [Walkthrough Example Implement Text Classification with Python - \(14 pages\)](#)
- [Walkthrough Sentiment Analysis - Model for Predicting Review Sentiment in Python](#)

Speech Analysis

- [The Ultimate Guide To Speech Recognition with Python](#)

Image Processing

- [Setting up a Simple OCR\(Optical Character Recognition\) Server Python \(8 pages\)](#)
- [A Step-by-Step Introduction to Object Detection Algorithms \(10 pages\)](#)
- [Walkthrough Face Detection with Python - \(20 pages\)](#)
- [Scanning Images for Near-Duplicate Detection \(9 pages Python\)](#)
- [What Kagglers are using for Text Classification \(8 pages\) Python](#)

Deep Learning

- [Walkthrough how to use Deep Learning to solve a problem with Python - \(13 pages\)](#)
- [A Comprehensive Hands-on Guide to Transfer Learning with Real-World Applications in Deep Learning](#)

Neural Networks

- [How To Create Your first ANN - Artificial Neural Network In Python \(7pages\)](#)
- [Build an RNN - Recurrent Neural Network from Scratch in Python \(11 pages\)](#)
- [CNNs, Part 1: An Introduction to Convolutional Neural Networks](#)

Generative Adversarial Networks (GANs)

- [GANs from Scratch 1: A deep introduction. PyTorch & TensorFlow code \(25 pages\)](#)

Algorithms & Techniques

- [Understanding Support Vector \(22 pages SVM\) from examples \(with code Python & R\)](#)
- [Polynomial Regression As an ALTERNATIVE to Neural Nets \(26 pages\)](#)
- [SELF-Supervised Learning \(122 pages\)](#)
- [Understanding Bayesian Inference with a SIMPLE example in R \(4 pages\)](#)
- [Must Know Probabilistic Programming and Bayesian Methods \(19 pages\) Python](#)

Clustering & Segmentation

- [Comparison of Segmentation Approaches using Clustering \(9 pages\)](#)
- [Guide to HIERARCHICAL Clustering \(23 pages\) and how to Perform it in Python](#)

Time Series

- [Extensive Time series analysis tutorial in Python \(56 pages\)](#)

Visualization

- [3 Awesome Visualization Techniques for every dataset in Python](#)
- [Data Visualization in R - \(62 pages\)](#)
- [Data Visualization in Python - \(7 pages\)](#)
- [The Data Visualisation Catalogue](#)

Chatbots

- [Build your first chatbot in Python using NLTK - \(6 pages\)](#)

Customer Analytics

- [Recommend the Best Channels for Contact Python \(9 pages\)](#)

IoT - Internet of Things

- [Four Options for Integrating Machine Learning with IoT](#)

Design Thinking

- [What is Design Thinking and Why Is It So Popular?](#)

Deploying / Productizing

- [Deploying a Python Web App on AWS](#)

FREE training material/courses & Notes

- [A Facebook field guide to Machine Learning - Video Series](#)
- [Essential Notes \(28 Pages\) - Coursera Deep Learning Course by Andrew Ng](#)



Cheatsheets by Topic:

[Artificial Intelligence](#)

[Data Engineering \(Google\)](#)

[Data Visualization \(Python\)](#)

[Visual Explanation of Deep Learning \(21 pages\)](#)

[GIT](#)

[Machine Learning Infographic with code](#)

[Model Building Process Flowchart](#)

[Segmentation & Clustering Cheatsheet for R & Python](#)

[SQL \(Graphical\)](#)