

# Academics Trainings



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## Telecommunication

- 2G to 5G Journey , Departments in Telecom Sector
- Sectorization & Tilting
- ( 2G/3G/4G)Cell Site Structure
- GSM Architecture
- Air Interface Practical Concept( TDMA/FDMA, ARFCN )
- GSM Channels and Call Flow
- Handover and Identifiers
- ( 2G/3G/4G) RF Survey
- ( 2G/3G/4G) RF Planning Fundamentals
- 2G RF Planning (Parameter, Coverage & Capacity)
- Installation and Commissioning
- Operation and Maintainace Center
- ( 2G/3G/4G)Drive Test Fundamentals
- 2G Drive Test
- 2G Optimization & Case Study
- 3G Architecture & ITS FEATURES
- Air Interface (WCDMA & Codes )
- 3G Channels
- Handover & Power Control in 3G
- Call Flow Of 3G
- 3G Planning (Parameter, Coverage & Capacity)
- 3G Drive Test
- 3G Optimization & Case Study
- 4G ( Feature & Network Architecture )
- 4G Call Flow
- 4G Channels & Handover
- 4G/LTE Planning
- 4G Drive Test
- 4G Optimization & Case Study
- Optical Fiber Communication
- Optical Fiber Communication & LOS Survey
- Networking
- 5G Network Fundamentals



## Android

- Android Overview
- Android Architecture
- Deep Overview in Android Stack
- Android SDK Overview
- Setup Android Development Environment
- Creating First Android Application
- Android Components
- Hello World App
- Android Application Fundamental
- Main Building Block
- User Interfaces
- Handling User Event
- Notifying User
- Application Resource
- Android System Overview
- Multimedia in Android
- Date Storage
- Introducing SQLite
- Security and Permissions
- Graphics
- Location Based Services and Google Map
- Basic Content Provider
- Services
- Web Services and WebView
- Broadcast Receiver
- Intent Filter
- Sensors
- Wi-Fi
- Camera
- Bluetooth
- Telephony Services



## Python

- History
- Why Python 3 Programming?
- Python Setup
- Write your First Program
- How to execute Python Program?
- Objects and Data Structure
- Comparison Operators
- Python Statements
- Methods and Functions
- Modules and Packages
- Object Oriented Programming
- Errors and Exceptions Handling
- File Handling



## Machine learning

- Introduction to Machine Learning
- ML Algorithms
- Regression based Learning
  - Simple and Multiple regression
  - Logistic regression
  - Predicting house prices with regression
- Clustering Based Learning
  - Definition
  - Types of Clustering Algorithm
  - The k-means clustering algorithm
- The k-means clustering algorithm
- Natural language Processing
  - Install NLTK
  - Tokenize words
  - Tokenizing sentences
  - Speech tagging
  - Sentiment analysis with NLTK
- Introduction to matplotlib
  - Bar Charts
  - Line Charts
  - Scatter Charts
  - Bubble Charts
- Setting up opencv
- Loading and displaying images
  - Tracking faces
  - Face recognition
- Introduction to Neural Networks
- Activation functions
- Neural Learning Rules



## Data science

- Introduction to Data Analysis
  - What is data analysis?
  - Why python for data analysis?
- Essential Python Libraries
- Jupyter Notebook
- Numpy Arrays
  - Numpy –Data types
  - Array Attributes
- Indexing and Slicing
  - Creating and views and copies
  - I/O with numpy
- Working with Pandas
- Pandas dataframes and series
- Joining dataframes
- Handling missing data
  - Writing CSV files with Numpy and Pandas HDF5 Format
  - Reading and Writing to Excel with Pandas JSON data
- Statics and linear algebra
  - Basic statistic with numpy
  - Linear Algebra with numpy
  - Numpy random numbers

## Artificial intelligence

- Introduction to AI
  - AI Techniques
  - Levels of models
  - Use of AI
- Intelligent Agents
- State Space Search
  - Control Strategies
  - Heuristic search
- Approaches to Knowledge Representation
  - Semantic Sets
- Frame and Scripts
- Conceptual dependency
- Propositional Logic
- First order predicate logic
- AI reasoning
  - Monotonic Reasoning
  - Non-Monotonic Reasoning
  - Default Reasoning
- Introduction to Neural network
- Introduction to Fuzzy logic
  - Concepts of Fuzzy Logic
  - Fuzzy sets and Systems
  - Operation on sets



- Mapreduce
- YARN
- Hbase and Hive
- Pig
- Sqoop Zookeeper
- Oozie
- Big Data Stack
- Databases and Data warehouses
- Using Hadoop to store data
- Testing and debugging Map reduce applications
- Introduction to Hadoop
- Functioning of Hadoop



## Block Chain

- Introduction to Blockchain
- Understanding SHA256 – Hash
- Immutable Ledger & Distributed P2P Network
- PROSPECTS OF BLOCKCHAIN
- InstructionS for Blockchain
- Introduction to Mining
- How Mining Works: The Nonce
- Consensus Protocol: Proof-of-Work
- Introduction to Cryptocurrency and Bitcoin
- Bitcoin's Monetary Policy & Virtual Tour of a Bitcoin Mine
- How Miners Pick Transactions?
- CPU's vs GPU's vs ASIC's
- Transactions and UTXO's
- What is Segregated Witness
- Hierarchically Deterministic Wallets
- Introduction to Ethereum
- Introduction to Smart Contract
- Decentralized Applications
- Ethereum Virtual Machine & Gas
- The DAO Attack
- Introduction to Hyperledger
- Hyperledger Architecture
- Initial Coin Offering(ICOs)
- ICO case study

## Big Data

- Overview of Big Data
  - History of big data
  - Elements of big data
  - Advantages and Disadvantages
- Big data in business (Marketing, Retail, Hospitality, defense etc)
- Introduction to Hadoop
- Functioning of Hadoop
- Hadoop Ecosystems
- HDFS

- Blockchain and Web 3.0
- INTRODUCTION TO MULTICHAIN
- Mining in multichain
- Multiple configurable blockchains using multichain
- Round robin mining
- Introduction to Alt Coins:
- Ripple
- Neo
- Litecoin
- Cardano
- Stellar



- Types of Movements and watching various videos clips
- Image Processing in Robotics
  - Artificial Intelligent in Robotics
  - Various Activities and Challenges
- Velocity Analysis of robot manipulators
  - Static Analysis of robot manipulators
  - Various activities and Challenges
- Modeling and control of flexible robots
- Robot Dynamics and Control –Case Studies



## IOT

- Introduction to IOT, IoT Architecture, Sensors and Actuators
- Arduino Hardware Overview and Programming Fundamentals
- Raspberry Hardware Overview and Programming Fundamentals
- Interfacing Sensors and Actuators with Hardware
- IoT Communication Protocol
- IoT Programming, Security and Design
- Introduction to IP and OSI Models
- Introduction to Cloud Computing and Big Data
- IoT Cloud Platform (Ubidot)
- 5G Features, Architecture and its Applications

## Robotics

- Introduction to Embedded Systems And Robotics
  - Uses of Robot in Daily lives
  - Possibilities with a Robot
- Sensors
- Links and joints
- Actuators and its types

## Virtual reality development

- Introduction to VR
  - Basics Of Virtual Reality
  - Exploring Applications of VR
  - Understanding the challenges in VR
  - Game objects
  - Models, materials and textures
  - Light and cameras
  - Introduction to 3D reality environment
  - Basics of 3D graphics
  - Advance 3D audio techniques
  - Physical Navigation and Virtual navigation techniques
- User Interfaces in VR
  - Introduction to Unity3d Engine
  - Unity integration with VR.
  - Animating and controlling virtual character's body movement in VR.
  - Prefabs
  - Overview of HTC Vive & Oculusrift
  - Setup Oculus for Unity
- Windows MR: Beginner
- Apple ARkit: Beginner
- Microsoft HoloLens: Intermediate
- HTC Vive: Intermediate



- Fundamental components of a cloud
- OpenStack as an OPEN Source cloud operating System
- Deployment of single node Open Stack cloud
- Cloud adoption and migration
  - cloud adoption & migration concepts
  - API based Integration
  - Cloud adoption strategies & workload analysis
  - Cloud design and architectural styles
- Microsoft Azure
  - Organisation and Identity
  - compute, storage & networks
  - containers, logic apps , cosmosDB
  - serverless, microservices
- Google cloud
  - Ogranisation & identity
  - Compute,storage & networks
  - Google kubernetes engine
  - AppEngine & cloud functions

## Cloud Computing

- Why Cloud Computing?
  - Overview
  - Traditional Vs Cloud
  - Deployment models
  - Service Models
  - Security and Privacy
- AWS Core & Managed Services
  - AWS Global Infrastructures
  - EC2,S3,EBS,and EFS
  - AWS CLI
  - Loading balancing & auto scaling
  - VPC's
  - Relational database services
- Big Data and Cloud
  - Basics of RADBMS,NoSQL,Data store and big data management
  - Cassandra & AWS dynamicsDB
  - Basics of Big Data Analytics
  - AWS EMR & Hive
- DevOps on Cloud
  - Basics
  - AWS CodePipeline, CodeBuild & CodeDeploy
  - Terraform & CloudFormation
  - AWS CodeCommit & Git
- CONTAINERS AND MICROSERVICES
  - System and app containers with LXD and Docker
  - AWS Elastic container services
  - Building Software with Microservices
- Private cloud



## Networking CCNA

- CCDA
- Designing for CISCO Internetwork Solutions
- Description of the Methodology used to design a network
- CCNA Cloud
  - Understanding CISCO cloud fundamentals
  - Introducing CISCO cloud administration
- CCNA Data Centre & CCNA Service Provider
- Introducing CISCO Data Centre networking (DCICN)
- How to Deploy NEXUS 1000V lab
- CCNA Routing and Switching

- Interconnecting Cisco Networking Devices (ICND1)
- Interconnecting Cisco Networking Devices (ICND2)
- CCNA Security
  - Implementing CISCO network security
- CCNA Wireless
  - Building CISCO service provider next generation networks
- (SPNG1)
- (SPNG2)



- Streams Computation with console
- Manipulating Strings
- Object-Oriented Systems Development

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## PHP

- Introduction to PHP
- Handling HTML form with PHP
- Decision and Loop
- Function
- String
- Array
- Working with File and Directories
- Mini Project (with File Handling)
- State Management
- String matching with regular expression
- Generating Images with PHP
- Practical
- Introduction to OOPS
- Exception Handling
- Database Connectivity with MySQL
- Mini Project (with File Handling)
- Web Designing
- HTML
- CSS
- Java Script
- JQuery
- AJAX
- Understanding Controller
- Understanding Model
- Understanding Object Relation Mapping

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## C/C++

- C Basics
- Conditionals
- Looping and Iteration
- Arrays and Strings
- Functions
- String Handling
- Structures and Unions
- Data Types
- Dynamic Memory Allocation & Dynamic Structures
- Advanced Pointer Topics
- Storage Classes
- Low Level Operators and Bit Fields
- The C Processor
- Integer Functions, Random Number
- Data Structures
- Sorting & Searching Techniques
- C++ OOPS
- Moving from C to C++
- Classes and Objects
- Constructors and Destructors
- Operator Overloading
- Inheritance
- Virtual Functions & Polymorphism
- Templates
- Exception Handling

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## JAVA

- Introduction to Java
- Object Oriented Programming
- Basics of Java Language
- Control Flow Statements
- Classes and Objects
- Interfaces and Inheritance
- Packages
- Exceptions
- Input Output streams
- An Introduction to Threads
- Applets
- Introduction to AWT
- Introduction to Swing
- Collections
- JDBC





- Introduction to JDBC
- Databases and Drivers
- Data Source Name
- Connecting to the Database
- Execute Statements
- Databases
- Understanding Model
- Understanding Object Relation Mapping
- JAVA EE
- Remote Method Ivocation
- Enterprise Java Beans
- Java Naming and Directory Interface
- Java Authentication and Authorization Service
- Java Messaging Service
- Extensible Markup Language
- JAXP 1.2 (Java API for XML Parsing)
- Web Services



## Embedded Systems

- Introduction to Embedded Systems and Microcontrollers.
- Introduction to 8051 and 'C' programming
- 8051 Architecture and addressing modes
- 8051 Peripherals
  - Timers
  - Counters
- Interrupts in 8051
- Interfacing of 8051 to LCD
- Interfacing of 8051 to ADC
- Interfacing of 8051 to Keyboard and stepper motor
- Interfacing of 8051 to timer chips
- Embedded system with PIC
  - Introduction to PIC
  - Architecture of PIC
- Pin Description of PIC
- Power Supply Setup
- LED Interfacing
- LCD Interfacing
- Relay Interfacing
- DC Motor
- Stepper Motor
- Switch Interfacing
- Buzzer Interfacing
- Seven segment Interfacing
- Serial Communication Using PIC

## Digital marketing

- Introduction to Machine Learning
- Introduction to opencv
- Introduction to NLP
- Working with bigdata
- On-Page and Off-Page SEO Practices
- Learn SEO via Best SEO Tools
- Learn SEO Relevant Website Design Practices
- Understand Best Link-Building Practices
- SEO Site Audit & Algorithm Update
- SEO Analytics
- SMM History & Social Media Importance
- Understand Community Building & Develop Facebook Marketing Strategies
- Understand Facebook Ads
- Understand Twitter Marketing & types of Twitter Ads
- Understand LinkedIn Marketing in B2B Businesses
- Learn YouTube Marketing
- Understand Pinterest, Instagram Snapchat & other Social Media Marketing
- Delve into SMM Analytics
- Email Marketing Basics & Evolution
- Email Marketing- Mailing List & Organizing the Mailing List
- HTML & Text Emails
- Newsletter Announcement & Event Invitation
- Content & Landing Pages
- Email Marketing Spam Compliance & How to Avoid Spamming?
- Avoid Being Blacklisted in Email Marketing
- Service Providers, Automation & Metrics
- Follow UPS, Tools & Email Marketing – Tips
- Content Marketing overview
- Content Creation & Targeting Customers
- Know What Blogging is
- Make your Content Strategy



- Content Promotion, Analysis & Reporting
- PPC Introduction
- Understand the Complete PPC Glossary
- Ads on Google
- Keyword List in PPC
- Parts of PPC Ad
- PPC Landing Pages
- Bidding in PPC
- Yahoo & Bing Search Marketing
- Measuring Results
- Analytics Introduction
- Web Analytics Dashboard
- Google Analytics
- Analytics Tools
- Key Metrics in Google Analytics
- Segmentation in Google Analytics
- Web Analytics Conversions
- Other kind of Analytics

