



**BHADALE GROUP OF COMPANIES
- IT AND REAL ESTATE**



Oct 13 2019

Data Science Project Implementation Catalogue

Bhadale IT Developers Pvt. Ltd | Bhadale Real Estate Developers Pvt. Ltd (registration due)

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Bhadale Group of Companies

Bhadale Group of Companies consists of Bhadale IT Developers Pvt. Ltd and Bhadale Real Estate Developers Pvt Ltd.

1. **Bhadale IT Developers Pvt. Ltd** is an IT and Computer Engineering company

This company provides consultation in areas of cutting edge technologies, research outsourcing, and software consultation related to data center and related engineering practices

2. **Bhadale Real Estate Developers Pvt. Ltd** is a Real estate company

This company provides development of Infrastructure for IT Datacenter and allied sectors. It manages the engineering design, landscaping, civil architecture, presently serving internal projects.

Bhadale Group of Companies has aggressive programs in place to serve the niche market.

Bhadale IT Developers Pvt. Ltd Programs and Services**IT Division programs**

- 1 Cloud Architecture
- 2 AI
- 3 Digital
- 4 Automation
- 5 R&D services
- 6 Engineering services
- 7 Mentoring Services
- 8 Data center services
- 9 Outsourcing

There are various services offered under each program, details are described below

IT Division program related services**Cloud Architecture**

- Cloud Enterprise Architecture
- Cloud Business Architecture
- Cloud Information / Website data Architecture
- Cloud Solution Architecture
- Data center Virtualization and Cloud services (IaaS)
- Cloud Technical Architecture – Project specific
- Cloud ERP Solutions (SaaS, PaaS)
- Cloud Strategy and Transformation
- Cloud Systems Integration and consolidation
- Cloud Project Management
- Cloud Pre sales support
- Business Needs (RFI/RFQ/RFP assistance)

- Cloud Quality Initiatives
- Cloud Business Analysis
- Cloud Infrastructure Planning – hardware , network, storage , backup (IaaS, PaaS)
- Cloud business portfolio assessment services (workshops)

AI

- Artificial intelligence and advanced machine learning
- Intelligent applications, Intelligent things
- Conversational systems
- Mesh app and service architecture
- Adaptive security architecture

Digital

- Virtual reality and augmented reality: Brief capability, deliverables and service offering
- Digital twins
- Blockchains and distributed ledgers
- Digital technology platforms

Automation

- Robotic Process Automation
- IoT
- Manufacturing robots
- BPO call center robots
- Chatbots
- Remote workers
- Hazardous jobs robots(Mine bombs, nuclear waste, underwater, space etc)

R&D services

- PHD mentor, buddy
- BPO - Outsourced work in areas of research areas related to IT and Computer Engineering

Engineering services (Only Engg)

- Engineering services for Data centers
- Engineering services for IT Departments
- Engineering architectures, drawings, road ways, town house planning, parking, safety, outdoor maintenance, lighting etc
- All other aspects of engineering: Civil, electrical, water and sewage, safety and mechanical motors, pumps, refrigeration, cooling

Mentoring Services

- IT Mentoring
- Engineering Mentoring
- Business Mentoring
- Mentoring for special categories based on age, and disabled
- Mentoring for special professionals like Military and Govt officials under Govt Programs

Data center services (Engg + IT)

- Data center Engineering services
- Data Center IT Services
- Data center Security services
- Data Center QA services
- Datacenter Cloud services
- Datacenter compliances services
- Data center based business solutions

Outsourcing

- Insourcing
- Outsourcing
- Near sourcing
- Cloud sourcing
- BPO services
- IT specific services
- Engineering specific services
- Training specific services

Service details for Bhadale IT Developers Pvt. Ltd

IT Division programs – Data Science Project Implementation



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We have a large set of offerings; few are mentioned below

No	Name	Key component features / Use cases
1	Data Science- Project Implementation Plan	<p>Based on the methodologies shortlisted earlier, we elaborate on the tools, configuration types and product features as part of the implementation plan. Implementation happens in a phased manner with broadly three steps</p> <ol style="list-style-type: none"> 1. Gathering information needs from users, documents and meetings 2. Designing an analytical approach by using chosen methods and 3. Implementing the data science pipeline / modules and evaluating the results of the data product(s). <p>Various Data model designs/ algorithms are considered and best one that fits the current need is used. Various data structures , statistical / DM / AI / NLP algorithms for data capture, data cleaning, data transformation and data storage are considered that will offer this project the best results</p> <p>Planning will take care of finer details as mentioned below:</p> <ol style="list-style-type: none"> 1. Implementation types- Standalone, public cloud, private cloud, hybrid cloud, dedicated in house, co-located, hosted at 3rd party, NN model hosted platforms, mobiles, machines, robots, wearable, in-car, in-house, on-land, under water, in open space, and in industrial setup. 2. Data location types- Available in-house, online datasets, private organization data, geo specific location, province, federal, intra government, inter-country, multi-continental, devices, videos, live streams, borders, perimeters, in premises, LAN,WAN,MAN,PAN topologies, centralized, decentralized, block chain, emails,

- voice, images, big data sources data lakes, data warehouse, M2M,B2B, sales data, satellite data, radio data, digital twins, & digital platforms
3. **Data capacity type-** For personal use, SME, large enterprise, research, Government, Mini labs, IOPS, Tera-flops, throughput, NW aggregation bandwidth, data variety, data volume, & transaction capacity
 4. **Processor types-** SISD, SIMD, MISD, MIMD, Shared-all, Shared- nothing, hyper scale, parallel processing, make- Intel, AMD, coprocessor, multi-core, Hardware virtualized, accelerated, AI workload processing, offloading jobs, GPU, processor fan outs, processor cooling, nano, quantum processor, & placement on motherboards.
 5. **Network types-** Topologies, distance covered, repeater used, protocol used, microcell, intelligent cells, simple LAN, peer, mesh, wired, wireless, last mile connection, overlayed network, submarine cables, short, long haul, administration zones, power supply, autonomous, fault types, MTTR, & OEM devices
 6. **Memory organization /drives-** Flat , hierarchical, RAM,ROM sizes, DRAM,DIMM, cache, USB 3.0, Wireless protocols, external storage, Ethernet cards, memory pooling, memory virtualization, read ,write operations, memory store forward, parallel, serial access, distributed memory, transit-memory, serialization of memory data, affinity with processor, chip types, strategy for processing large data, in-memory, AI based memories, file sizes, coordinator and results stored.
 7. **Storage types-** SSD, magnetic disk, primary, secondary, short term, long term, local, remote, in-transit, expansion slots, scalable, server types, price, OEM, raid, stripe, redundancy, I/O capacity, transfer protocol, intra data-center, geo-location, management, administration, resizing, attach, detach points, host bus adapter, file scanning, security scan, data center data upload features, storage racks, data ingestion rate, rate retrieval rates, data –pools, data warehouses, unstructured data storage, growth management, automatic scanning, & AI based intelligent routines.
 8. **Interlinks / IPC-** topology, protocol, board types, wired, wireless, intra processor, speed, throughputs, coordinator, handover control, tokens used, access permissions, IPC threads, contention, data and control bus,32, 64 bit data transfer speeds, parallel data transfers, big switch, & routing
 9. **Ports & types-** USB C, USB 3, Ethernet ports, diagnostic ports, backups, auxiliary ports, expansion ports, Infibeam, fire wire, e-SATA,ISCSI, port aggregation, logical layers, network topologies, optical, electrical, opto-electronic, serial , parallel, layer 6,7 , LTE, 5G support, security, & vulnerability test types
 10. **Application, IDE type-** Windows, Linux, Ubuntu, ROS, No-GUI, MiniOS, Request/Response, Access levels, CI/CD integration, file protocols, encryption, layer 6,7 interfaces, HMI, firmware, Post, scripts, languages, ML modeler, NN training modes, commands to OS, middleware, inference model, separation if concern, micro services, containers, production constraints, debugging, stack trace, dispatchers, code level parallel, compilers, JIT, JVM, Meta data, manifest file, service discovery, library dependencies, Eclipse, Spark, hadoop, NWOs, master slave configuration, & schedulers
 11. **AI entity types-** Data structures, algorithms, datasets, NN layer types, CNN, GAN, LSTM, interfaces to NN layers, control mechanism for robotic interfaces, training times, epochs, scalability, integration with various platforms, big data processing, results verification, reuse of models, & transfer learning
 12. **Development Environment-** OEM libraries for motherboard, CUDA, IDE, XSD, datasets, NN libraries, Java, Open source, Python, Jupyter note-book, modeler, data transformers, Data architecture views, and enterprise layers
 13. **Project team-** Remote, onsite, offshore, co-located, in-house, & third party
 14. **Laws & ethics-** Privacy, GDPR, permission, data masking, hacking, copyright, patents, IP, laws, cybercrime, & electronic records, patient data, & secrets .

2	Data Science Project - deliverables	<p>As part of our deliverables, we offer project specific unique turnkey assets, few are as mentioned below:</p> <ol style="list-style-type: none"> 1. Technical solutions, Technical architectures, enterprise frameworks, reusable assets, design patterns, deployment assets, functional, non-functional requirements, QA-manual, auto testing, generation of endpoints, security features, cognitive capabilities, AI entities, algorithms, data –structures, project documentation, CI/ CD Devops –setup, process entities, integration. Cloud specific assets configuration, testing and integration with other platforms like hardware, software, network, digital certificates, and governance related asset developments. 2. Data pipeline entities implementation – new, modify and upgrade of pipeline, architecture modules for data ingestion, data cleansing, data transformation, data relations, data algorithms, data co-relation, No Sql data queries for CRUD, REST APIs, Endpoint configurations, deployable assets, pipeline monitoring, memory optimization, and short and long running services. 3. Coding of the required modules, IT assets, interfaces, API, external libraries, guided by the plan and agreed upon configuration and features. Prototyping, Unit testing, integration testing, UAT, deployment for target platforms, web, cloud and mobile one- page websites, domain services, gateways, hubs, and external library integration 4. Data Services like Data reductions, Data mapping, Associative statistics, distributions, Uni and multivariable data, Correlation matrix, Regressions(Linear, Logistics), Classifications(Single, Multi class),Clustering, predictive analysis, Naive Bayes functions, Stream analysis, vector transformations, Column oriented storage, No SQL, Partitioning, & Shards 5. AI and fuzzy algorithms for data processing, Optimization algorithms like A*, & Swarm optimization
3	Data Science Project - integration/ deployment/ Dev.Ops	<p>As per selected methodology, proper integration, deployment of assets and dev.ops tools, & products will be setup, configured and made operational, which ensures that you have the right methodology, processes and products in place</p> <p>Integration with required external websites, regional datacenters, backups, and third parties for auditing, governance, compliances, as per laws for data privacy, & GDPR.</p> <p>Few of the tools we have used are:</p> <p>Chef, Puppet, Ansible, Jenkins, AWS CloudFormation, Selenium WebDriver, JMeter, Pivotal GemFire, Greenplum Database, HAWQ, Hadoop, Map reduce, Gradle, Git, Bamboo, Docker, Kubernetes, Puppet, Nagios, Pandas, NumPy, Sci-kit learn, Python, Go, Team Foundation server, IBM Websphere, BizTalk, Sharepoint, Jira, to name a few</p> <p>Pre and Post deployment ,evaluation of project with the expectations using</p> <ol style="list-style-type: none"> 1. Confusion matrices. 2. Receiver operating characteristic (ROC) curve.

		<p>3. Area under the curve (AUC).</p> <p>With the above type of services, we assure that you have the right methodology, tools in place and that they are working as per your specifications</p>
4	Data Science Project - Engineering services	<p>Based on requirements, suitable engineering of the project assets will be subjected to engineering best practices and calibration that ensures the safety , security and quality of the product</p> <p>We offer various services related to computer hardware, network devices, and data center related services by qualified and licensed engineers. Few jobs that we have handled are analysis of cooling systems, HVAC, power supply, AC/ DC conversions, device specific power systems, wireless indicator, alarms, messaging, motor drives, generators, control room design and IoT features</p>
5	Data Science Project - IT Services	<p>Based on requirements, suitable IT software related services by qualified and licensed software engineers who work with IT teams to inspect and guide in making the required processes as per IT standards</p> <p>We have handled OEM licensing, digital certificates, digital signatures, encryptions, measures to avoid quantum hacking, cyber crime, corporate IT polices and related IT asset design and development</p>
6	Data Science Project - QA Services / Optimization	<p>QA related services by qualified and licensed professionals who work with SEPG, CMMI , & ISO standards</p> <p>We offer optimization of existing / old systems wherein we will examine, analyze the situations and issues affecting the performance. Based on expert advice we develop, tune, optimize required assets to make them fit for production</p>
7	Data Science Project – vendor, OEM based services	<p>For all tasks related specific to products from vendors like Dell-EMC, Microsoft, IBM, Apache, Amazon, and open source partners</p> <p>Team Data Science Process (TDSP) - a methodology and set of practices for collaborative data science from Microsoft, and various tools from Amazon , Dell-EMC and Cisco</p>

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