



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



Dec 28 2020

Technology Ecosystem for Products Catalogue

Bhadale IT Pvt. Ltd (registration due)

Canada & India

Mobile: +91- 9741040195 | Website: <https://vijaymohire.wixsite.com/bhadaleit>

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

Our Technology Ecosystem for Products



Image courtesy (The Web), no intention for copyright infringement

We have a large set of tools and solutions; few are mentioned below with details tabulated

Domain	Our Product offer	Our Products ecosystem/ features
AGRI PRODUCTS	<ol style="list-style-type: none"> 1. Farmer's climate aid 2. Precision agriculture/satellite farming aids 3. Agricultural tube farming aids 4. Smart Agriculture farm safety 5. Smart Agriculture crop safety 6. Smart Agriculture processing 7. Smart Agriculture storage 	<p>Weather forecast – Spark, Hive, climate, rainfall, snowfall , GIS datasets, Jupyter notebook, Google maps, historical time series forecasting algorithms using ML, Docker, and Kubernetes.</p> <p>Precision agriculture (PA), satellite farming or site specific crop management (SSCM), decision support system, on observing, measuring and responding to inter and intra-field variability in crops – GIS, spatial datasets, LEO satellite data feeds, Drone data feeds, images, and image classifications algorithms based on texture, mapping to issues, normality, dryness, wet, under-water, contamination levels etc. Co-relate similar, seasonal, historical data using CRAN statistical packages using R. Spark, HBase, Jupyter notebooks, Python, Linux, Neural NW based decision support system, batch –processing using data pipelines, nano, bio-sensors for various levels of monitoring, reporting and roll-up status , Analyzing satellite feeds to detect early warnings for pests, bugs, swarms approaching crops, snow, hails, temperature variations that enable farmers responses. Rodent and flies management by way of switching on sensors, buzzers to chase away using mini robots, rule based and fuzzy logic systems, LAMP , MEAN stack based portals hosted on Azure or AWS platforms</p> <p>Use of computer vision based robotic arms, conveyor belts , image sensors, real time classification of varieties of grains, at various configurable setting based on ISO, standards, sorting of wide range of raw crop deliverables and using farmer- friendly GUI settings to sort and auto value the market value. These all use various datasets, cost metrics, market value, expert systems inputs, that enable better return to farmer</p> <p>Stock Inventory management software along with real time analysis and</p>

		<p>degradation analysis, lab reports that enable better supply chain stock movements using MS Project, AI based Scheduling software using Python, R, robot-arms and integrated vision cameras</p> <p>Grain Storage system bio-sensors, nano-sensors collect various ecological , environment, ambient that enable better visibility and alerting farmers to sprinkle required remedy, all run in real time and batch- modes driven by centralized community servers/ cloud that offer value to supply chain</p> <p>Expert robot systems that will support basic farming tasks like tilling, sowing, harvesting, sorting fertilizer spraying, fruit picking all make better productivity and allow farmers to do more of planning and profit making sales activities</p>
AI PRODUCTS	<p>8. AI based Multi-agent system package</p> <p>9. Concordance software for text discovery and analysis</p>	<p>MAS systems using Java, Prolog/ Synergy, under Linux help realization, O-MaSE, JADE and autonomous intelligent agents to design agent societies that use genetic algorithms to better the agent society. This has lots of uses like in Digital Twin for new product design, Simulation of war like situations and games that help in better reinforced learning and adoption of virtual roles/ avatars that can help real world entities and humans.</p> <p>Realization of Use cases like Natural disaster management for proactive evacuation using mobile apps, automated mobile instructions (ambient and local aware services) using Android, iOS and other popular OS. Use of Autonomous Learning Agents for Decentralized Data and Information Network(ALADDIN), Industrial Sensors, Decision support systems using graphics.</p> <p>AI for Telecom 5G, private spectrums, AM/FM and other usable bands, using AI / ML algorithms and real time analysis, we offer load balancing, security features to prevent intrusion of live programs and a sense of comfort that operations will resume even with a disruption, to achieve 99.9% uptime. Smart grid functions, with edge computing, field based analysis and reporting and lot more that integrates electrical, electronics and software interfaces using NIST, ISO, and IEEE standards</p> <p>Text analysis packages using R based CRAN, NLP packages, Open NLP, and Natural Language Toolkit (NLTK) for unstructured big data analysis, mining and use of HBase, Hive for large volume storage in TB, enables better insights of the text semantics, meta-data and sentiments</p>
AUTOMOBILE PRODUCTS	<p>10. Manufacturing Robotic process automation system</p> <p>11. Electric car using a solid state hybrid battery</p>	<p>Kofax, AutomationAnywhere, HelpSystems, RAGE, IBM PowerAI</p> <p>Robotic systems from FANUC, KUKA, ABB , GE</p> <p>Overlay virtual systems , ROS, Motherboards, Raspberry pie boards, explainable AI tools for inference engine based decision system/ controller</p> <p>Photovoltaic cells, supercapacitors, nano-wired battery kits with micro batteries for nanosystems/ embedded systems, and battery for health-gadgets / long running remote systems</p>

AVIATION PRODUCTS	12. Aircraft delay analysis using big data with R 13. Engineering Test rig 14. Avionics units software test modules 15. Smart flight safety 16. Smart passenger travel 17. Smart fleet maintenance 18. Smart digital twins 19. Smart ticketing, cargo tracking, delivery	<p>R packages for delay analysis, multi facet charts, MIL STD 1553B, ADC, sensors, LRU unit processing, testing and performance w.r.t. delays in flights, SoC</p> <p>FPGA , wired \ wireless protocols, Boards from DDC, Apollo, 4GL libraries, 2d/3d graphics libraries, static / dynamic time spectrum analyzers, relays, safety trip switches, mobile app, POST, Cloud, edge computing, avionic parameters analysis using big data, spark, ML libraries, reporting and analysis using Tableau, MIS reports , virtual reality, simulations/ trainings based on proper / improper use, misuse, abuse of controls, safe flying training test environments using mixed, hybrid reality and automated corrections plan based on a pilots digital twin that captures the personality, traits and human preferences. Simulated space travel, using historical data about the facts of the universe, risks and how they can be removed for an actual flight that travel to far off planets</p> <p>In-flight experience for passenger who plan to tour the flight exterior , flying area using location aware, context aware apps, screens, virtual guides. Using big-data, satellite datasets, local view of the travel point is generated for virtual experience, for connecting flights, cabs, hotels, and transit information offered in mobile with no internet</p>
DATA CENTER-COMPUTING PRODUCTS	20. Smart Nano computing system 21. Smart Quantum Cryptography 22. Wireless Nanosensor Networks (WNSN) 23. Edge, fog computing	<p>DNA bio-material, nanotubes, gate circuits, computing platform using bio-sensor interfaces, energy efficient computing. Health science, genome packages , R and Python packages for analysis and quality testing</p> <p>Azure Edge, AWS lambda, Azure IoT using 5G. Quantum kits using IBM, Google and AWS</p>
DEFENSE PRODUCTS	24. Intelligent Army suite system 25. Force fields systems 26. Stealth technology kit	<p>Nano-technology, Intelligent fabric, Integrated virtual views, 3d view using mixed reality, various guides/cues for helmets, watch, inbuilt health monitor, gadgets, body temperature / movement generation of power (emergency), bio-sensors for poisonous gas detection, in body computing , location tracker, safe homing guidance even when suite is removed, auto locator alerts to base stations, GPS, GIS, satellite datasets, Spark, HBase, real time and batch processing, intelligence data decryption, in body memory erasure tools with biometric approvals</p> <p>Stealth technology carbon nano-tubes, nano-computing, user programmable interference amount generation for deflection, software, hardware interfaces</p>
EDUCATION PRODUCTS	27. Predicting Grant Applications using Spark's machine learning 28. RPN Calculator(using C) 29. Simple Math Calculator (using Java and JavaScript) 30. Hangman game (using Java) 31. Graph nodes	<p>Simple educational aids that help students get the real inside working of tools like calculators that show them how the equations / theorems are translated to solve real world problems. Pieces of code, equations and results, along with errors are shown using interactive apps, software written by us. We use variety of languages, visualization and graphics (2d/3d) that help students learn easily and do interns happily. We use C, C++, Java, Pythton,4G libraries, R, virtual reality, mixed reality and make PC based learning fun that enables better memorization, quicker learning. Our syllabus is based on popular adaptive learning techniques unique for</p>

	reachability analysis software (using DFS, BFS) 32. Dynamic Tree node management (using BST and node traversals) 33. Adaptive learning kit 34. Emerging business learning systems	<p>each learner.</p> <p>We also blend the learning with business, engineering and medical syllabus that enables students can start practicing after they graduate with good hands-on. We use mixed reality, NLP techniques to help learn better</p>
ENERGY PRODUCTS	35. Smart metering system 36. Digital Energy meter 37. Smart grid system 38. Nano-wired battery 39. Hybrid energy system interfaces and massive storage systems 40. Micro-batteries charged by everything from buildings to our bodies	<p>Smart grid software using Azure IoT, AWS, Cisco NW, edge services backed by Low power protocols, ZigBee, Grid sensors, energy converters using digital techniques, DSP, filters to suppress surges, accidental trips etc</p> <p>Inbuilt power failure analysis, prediction using big data, Azure HDInsight, integration of operational planes, IoT planes data planes and management planes using dual redundant failover clusters using Dockers and Kubernetes</p> <p>Neural NW based Inference engines that enable better edge based IoT devices monitoring and feedback control mechanism</p> <p>Failover Backup grid to support main grid failure with interconnects that switch over in seconds and based on OLA, Suitable data center type availability of 99% is possible using our unique architecture, big data analysis and smart control</p> <p>Suitable standards from NIST, Smart grid alliance, Green standards all make our products industrial grade</p>
ENGINEERING PRODUCTS	41. Digital TV	<p>We have base design for digital TV using comb filter, DSP processing using fourier transforms. We plan to add more features that enable use of latest technologies like virtual reality, NLP based interactivity, android TV, intelligent DTH, world channels integration, introducing online learning from home for all courses and research work wherever possible. Use of satellite based phone services, FM radio and many more spectrum use using 5G, WiFi. We plan to offer TV in various form factors that meet needs of individual like on a mobile app for various age groups, professions and genders. Integrated with radio, Internet, IoT, Virtual Office , the way TV is used will change as many convergence and similar use to a laptop will ensure TV will live long</p>
DRESS PRODUCTS	42. Intelligent dress material	<p>This project leverages on exoskeleton as base wear along with cloth/fabric that acts as a base for all types of gadgets. We customize the base gadgets and tailor them to match unique needs of individuals based on various factors. We have 10 models that will be mapped to requirements that enable better working condition, ambient and threat aversion including nearby abnormal human behaviors. We use IoT, AI/ML algorithms, NLP, sentiment analysis, adaptive learning and nano, bio-sensors to make the material suitable for industrial, commercial and home use</p>

GAMING & ENTERTAINMENT PRODUCTS	43. Shape generator for Games using Computer Graphics	Using Computer Graphics, we plan to use 3D, 4D, images, sounds and newer modes of gaming experience using SnapDragon, Intel Graphics accelerators, GPU, and an adaptive learning virtual assistant that reads your moves and offers recommended moves
GOVERNMENT PRODUCTS	44. Multi agent system for natural disaster management 45. Smart City cyber physical systems	<p>MAS systems using Java, Prolog/ Synergy, under Linux help realization, O-MaSE, JADE and autonomous intelligent agents to design agent societies that use genetic algorithms to better the agent society. This has lots of uses like in Digital Twin for new product design, Simulation of war like situations and games that help in better reinforced learning and adoption of virtual roles/ avatars that can help real world entities and humans.</p> <p>Realization of Use cases like Natural disaster management for proactive evacuation using mobile apps, automated mobile instructions (ambient and local aware services) using Android, iOS and other popular OS. Use of Autonomous Learning Agents for Decentralized Data and Information Network(ALADDIN), Industrial Sensors, Decision support systems using graphics. We adopt this to Govt frameworks, datasets, metrology labs, National agencies and generate advance reports using Tableau, Power BI, MIS charts and control room design</p> <p>Based on European Research Cluster standards and frameworks, we plan to develop cyber-physical systems that span across all major offering by city council. We offer flexible, unique solutions for each city while retaining the base model and offering localized solutions using IoT, Edge, Cloud, home gadgets, mobiles, laptops and interfaces to public services</p>
GREEN ENVIRONMENT PRODUCTS	46. Clean Tech systems	<p>Using Remap, IRENA global energy modeling framework, we plan to integrate conventional energies with newer energies using software, hardware, battery storage, smart grid, hybrid energy sources, nuclear, hydro energy, energy banks, that enable sustainable growth for at least one decade</p> <p>We plan to modernize existing power plant that will enable lesser pollution and better RoI, using better energy source overlays or new designs for the plants. We plan to even modernize the conventional energy systems that will use lesser power and can easily sustain for a week instead of a daily charge</p>
HEALTHCARE / LIFESCIENCE PRODUCTS	47. Intelligent Health monitoring systems 48. Smart Drug delivery 49. Smart nano coatings 50. Smart anti-microbial technologies 51. Smart medical batteries 52. Intelligent EHR services 53. Intelligent Doctor, physician services 54. Intelligent solutions for dental services 55. Intelligent paramedic	<p>Wireless Body Area network (WBAN), Intelligent fabrics, Bluetooth, 6LoWPAN, personal operating systems with less footprint like in android, iOS, AWS Cloud, Inference engine for sensor based edge intelligence decision making, lambda functions, bio-sensors, oxy meters, pulse meters, mini-cardiac gadgets, mini-ECG, IOT systems</p> <p>Deep Learning based body scan, extraction of features, diagnosis of abnormality using CNN, slices, 2d, 3d reports for easier surgery.</p> <p>Nano scale drug delivery patch/ cloth, nano sensor for delivery metrics, part targeted delivery system using 2d/3d measures to pinpoint the cancer and deliver right amount instead of brute force delivery, use of AI/ML to segment and pinpoint the abnormal area</p>

	services 56. Smart Diagnosis systems	<p>Nano-devices planted in intelligent fabric allows in better diagnosis within few hours without humans using AI/ expert system and ready to use normal charts/ graphs.</p> <p>Nano, bio-sensors that work on the signatures of the molecules, pollutants, viruses and bacteria, will enable better analysis using AI/ML with an inference engine to assist pathologists to diagnose precisely</p> <p>Low power micro batteries with nano-coating that help 99% efficiency in transfer of electrons and rechargeable using inside-body temperatures and other natural elements</p> <p>Patient health records processing management and long term storage using big-data, NoSQL document databases like CouchDB</p>
HI TECH PRODUCTS	57. Voice driven AI technology system 58. Intelligent Digital twin system	<p>AWS AI, Lambda, Translate, Kinesis, Comprehend, API gateway all driven in AWS / Java Runtime engine enables the app to be embedded or used in a standalone mode</p> <p>Oracle IoT Digital Twin is being leveraged to build big-data systems along with Spark, Hive and NoSQL concepts. Hadoop/YARN used to wherever possible</p>
HOSPITALITY PRODUCTS	59. Intelligent Hotel reservation management system 60. MAS based TAGA trading agent system 61. Intelligent food quality testing system 62. Intelligent Traveler's bots	<p>Hotel and Hospitality system will be driven by hybrid cloud platform with near real time processing using Hadoop based transaction/ non-transactional events with guaranteed delivery using SMS, app alerts, push notifications. AI/ML used to recommend suitable offers, discounts and early bird / holiday plans to premium clients. Data sets from tourism, hotels, national offices and related agencies are used to feed continuously. GUI to be JavaScript, Node.js., React, MEAN stack with cloud based security and scalability</p> <p>FIPS based multi-agent system for online trading and deals management using Agent society based human behavior simulation and inference to design various options for deals using Java, Python, Kafka, Akka, Eclipse, MongoDB, CouchDB and lambda functions to trigger events and offline processing</p> <p>Food quality testing for viruses, Covid, poison, lead, heavy metals, silica based on software signature mapping and classification based on various user selected features, Nano and bio-sensors used with nano-measurements being scaled for physical real size using AI algorithms</p> <p>Travel virtual guide using location, context aware apps integrated with tour data, history and real data to offer a great user experience even without no internet with offline ready to use data, use of GIS, satellite, local data sets, lambda, bot framework</p>
HR PRODUCTS	63. Resume shortlister AI agent system	<p>Use of Text mining algorithms, NLP libraries for unstructured data, Spark, EMR, ranking and priority algorithms, improved ATS pipeline with various user friendly filters that allow narrowing from a large pool of open</p>

		resume to a limited setoff 100 for personal review. Use of recommendation for top fitting resources with unique skills
IT-BT PRODUCTS	64. Intelligent routing & resolution system for a Call Center	NLP based algorithms for real time analysis and routing using Spark, Kafka streams that offer transactional guarantee
LAW PRODUCTS	65. Intelligent Lawyer system	An adaptable Neural network with feeds from expert systems that allows rule based and fuzzy based decision to be possible for best judgment. Aprior algorithm based knowledge offers better results. May be Markov chains will help
MANUFACTURING PRODUCTS	66. Intelligent Industry 4.0 robotic system 67. Collaborative Robot Cell safety system 68. Smart manufacturing robots 69. Smart manufacturing virtual assistant 70. Smart manufacturing inventory intelligence 71. Smart manufacturing plant automation 72. Smart manufacturing scheduling 73. Smart manufacturing process automation 74. Smart manufacturing quality intelligence 75. Smart manufacturing product ideas 76. Smart manufacturing niche industry solutions	<p>Systems from FANUC, ABB, GE, and KUKA will be used to tailor made GUI that enable better data integration with Azure and AWS clouds and Robot OS.</p> <p>Use of real-time data feeds from moving parts with possible deviations using look up statistic charts enable quicker decisions using various NIST standards, Type A/B/C standards for collaborative systems</p> <p>Use of various packages, frameworks from Rockwell, ISA, and integration with enterprise packages like SAP, Oracle that enable better insights and better supply chain movement from one station to another</p>
RESEARCH PRODUCTS	77. Experimental claytronics 78. Molecular electronics digital technology 79. Programmable matter 80. Using The Internet For Hardware Downloads — Not Just Software 81. Nanobots brain plug-ins for the cloud 82. Gene therapy for deafness 83. Next Tech or NT aids, integration and systems 84. Early Clustered Regularly Interspaced Short	To Do

	Palindromic Repeats (CRISPR) gene editing technology	
RETAIL PRODUCTS	85. Smart retail SCM 86. Smart retail inventory and anti-theft system 87. Smart retail shopping recommender 88. Smart retail warranty 89. Smart retail safety 90. Smart retail logistics 91. Smart FMCG 92. Smart retail innovations	<p>Virtual shopping aids, real time retain inventory updates, theft detections at checkout, fraud detection all make it possible using AI/ML, NLP, tag reader, remote vision, auto checkouts, without any personal aid will enable better shopping experience</p> <p>Recommendation display on the shop gadgets to the shoppers allows them to shop without remembering their needs, use of personal data, history using big data and personal recommendation systems, algorithms</p> <p>For owners, better insights of sales, rolled up charts on day, week, quarter reports enable better tax compliance and audits</p>
SECURITY PRODUCTS	93. Anti-theft detectors for business online details safe 94. Personal security kit for personal-family safety and safety of assets 95. Personal defender kit for early warning and self defense 96. Nanotech sensors for preventing individual and group terrorism	To Do
TELECOM PRODUCTS	97. Intelligent Telecom resource management system 98. Mobile Ambient intelligent system 99. 5G planning, migration services 100. Network planning 101. Network infrastructure implementation 102. Telco software design 103. Cloud integration services 104. Smart Telco NW 105. Smart Telco virtual assistants 106. Smart Telco Inventory 107. Smart Telco predictive maintenance 108. Smart Telco process automation 109. Smart Telco industrial solutions	<p>Using DeepCog concept we design 5G capacity forecasting, use of virtualized network, cloud burst, DWDM, OFDM, and orchestrations using API, GUI, data logger big data analysis, spectrum usage monitors and handling of millions of dynamic secure key handshakes across million IoT devices and use of Azure IoT, edge analysis, will help better usage, reduced theft and avoiding outages with availability of 99.9%</p> <p>Suitable apps and websites will be developed using real time lambda, IoT, real time Kafka streams, data-pipelines and caching</p>

Transport products	110. Intelligent Telemetry system for multi-modal vehicles 111. Intelligent Transport and logistics tracking 112. Cognitive Travel system 113. Cognitive Driver's aid 114. Intelligent traffic Management system 115. Intelligent Drones' Order dispatch system	Wireless PAN, WAN, LoRA, OFDM, LEO satellites, GPS and blind navigation systems will help us to build a long term regional and national infra that will help to scale population, and transactions, using Java, API, decentralized, edge systems with intelligent inter connects and cloud based integration
BANKING PRODUCTS	116. Bit coin and crypto currencies 117. Anti-quantum hackers aids	FPGA based Bitcoins mining software, crypto wallets software, smart contract, ledgers all make our solution mature and use of post quantum algorithms makes it less prone to quantum hacking
CO-WORKING PRODUCTS	118. Solution Café - personalized co-working space	A collaborative cloud platform for virtual office, home office and physical office experience using gadgets, mini-conference systems, offline and live operations management, shared desk, personal and official setup using Cisco, MS Office, Azure, virtual desk tools

Disclaimer: Few product details are sourced, from the web; we have no intention to infringe any text or web content. We are using this for illustration purpose only

For more details, contact below:

Contact

Bhadale IT Pvt. Ltd

CTO: Vijay Mohire, 9741040195; Email: vijaymohire@gmail.com