LAIF

SERVICES

The present
COGNITIVE CHALLENGES

Talent Scarcity | Readiness Gap | Solution Value Gap

are
PARALYSING COMPANIES BLOCKING AI POTENTIAL .

1

POTENTIAL. CHALLENGES.

Talent Scarcity

AI is a scarce resource based on demand and supply forces

300,000 AI engineers | 5,400 AI publishing experts | 22,000 PhDs | 4.5x jobs growth from 2013

Readiness Gap

Businesses do not consider themselves ready to adopt AI

Challenges: Data, Talent, Technology, Management | Black Box Non-progressive Solutions | <32% feel AI-ready
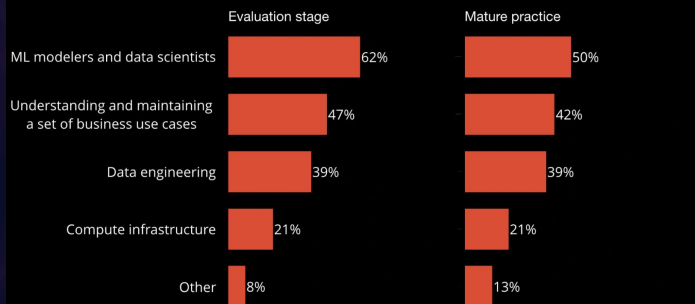
Solution Value Gap

Businesses struggle to innovate and enhance with AI

AI as Support | No Translational Skills (tech-culture-business-market), Risk Management, Integration, Method

+$15.7T Global GDP by 2030
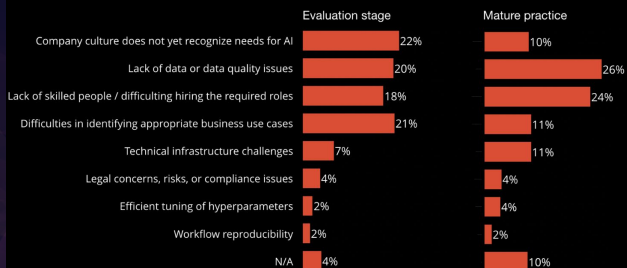**+$89B** AI Revenue by 2030
+$14 T Profit by 2025

→ AI Exceeds Human Performance at Specialised Tasks
→ High, Easy AI Improvement of Core Industry Functions
→ Business Enhancement or Innovation
→ +66% performance boost using AI over existing techniques

Tencent's 2017 Global AI Talent White Paper | 2018 JFGAGNE AI Talent Report | Kaggle 2017 State of Data Science and Machine Learning | MIT Sloan Management Review and Boston Consulting Group, 2017 Research | Accenture, Fueling Industry Growth | Accenture, How AI Boosts Industry Profits and Innovation | Deloitte - AI, robotics, and automation: Put humans in the loop | Voice of the Enterprise Digital Pulse Survey, 451 Research, 2018 | Pwc. Sizing the prize: What's the real value of AI for your business and how can you capitalise? | Stanford, Value Chain Innovation: The Promise of AI, 2018 Statista, Projected increase of GDP due to artificial intelligence by industry sector in 2030 | McKinsey, Notes from the AI frontier: Insights from hundreds of Use Cases, 2018 | Tractica, Artificial Intelligence Hardware and Software Infrastructure 2018

Where are the biggest skills gaps within your organization, related to machine learning and AI adoption? (select all that apply)
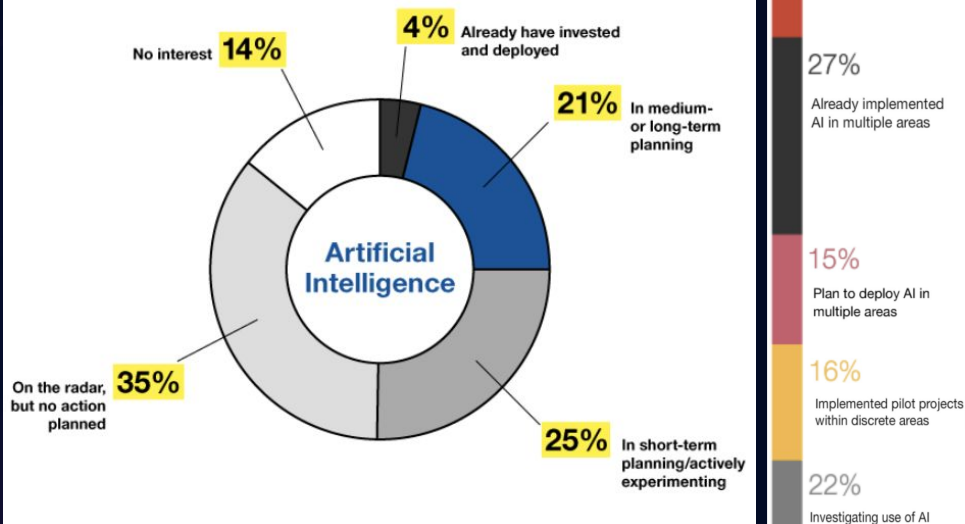
	Evaluation stage	Mature practice
ML modelers and data scientists	62%	50%
Understanding and maintaining a set of business use cases	47%	42%
Data engineering	39%	39%
Compute infrastructure	21%	21%
Other	8%	13%

Percentage of respondents (at a given stage of AI adoption) who selected given option

What is the main bottleneck holding back further AI adoption? (select one)

	Evaluation stage	Mature practice
Company culture does not yet recognize needs for AI	22%	10%
Lack of data or data quality issues	20%	26%
Lack of skilled people / difficulting hiring the required roles	18%	24%
Difficulties in identifying appropriate business use cases	21%	11%
Technical infrastructure challenges	7%	11%
Legal concerns, risks, or compliance issues	4%	4%
Efficient tuning of hyperparameters	2%	4%
Workflow reproducibility	2%	2%
N/A	4%	10%

Percentage of respondents (at a given stage of AI adoption) who selected given option

Deployment of **AI Initiatives** in 2018

4% Already have invested and deployed

No interest **14%**

21% In medium- or long-term planning

Artificial Intelligence

On the radar, but no action planned **35%**

25% In short-term planning/actively experimenting

gartner.com/SmarterWithGartner

Base: Respondents to the 2018 Gartner CIO Survey, excludes DK, n=3,138
Q: What are your organization's plans in terms of the following digital technologies and trends?

Source: Gartner
© 2017 Gartner, Inc. and/or its affiliates. All rights reserved. Gartner is a registered trademark of Gartner, Inc. or its affiliates.
For more information, email info@gartner.com or visit gartner.com. PR_060_348978

Gartner.

20% Plan to deploy AI enterprise-wide

27% Already implemented AI in multiple areas
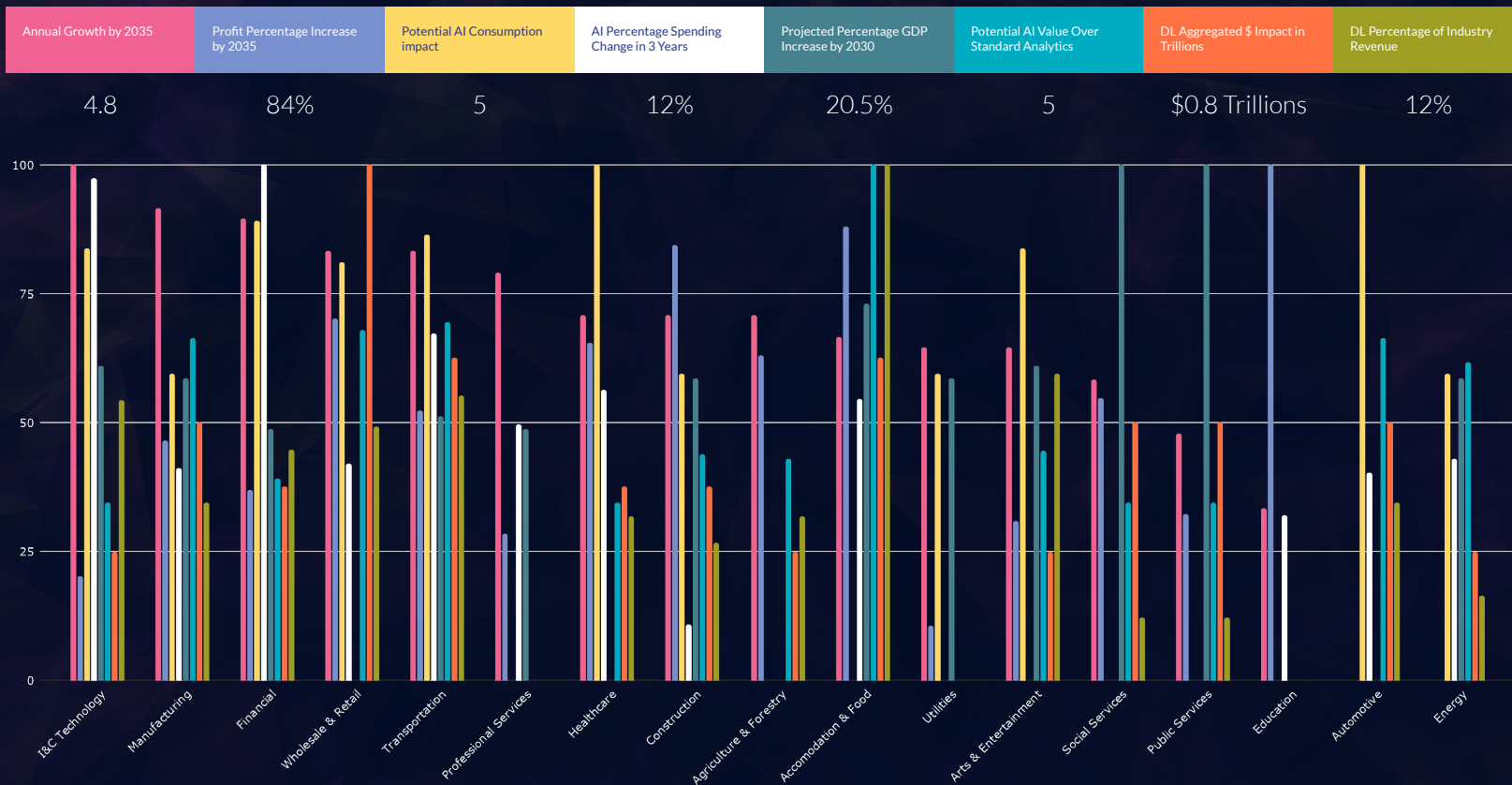
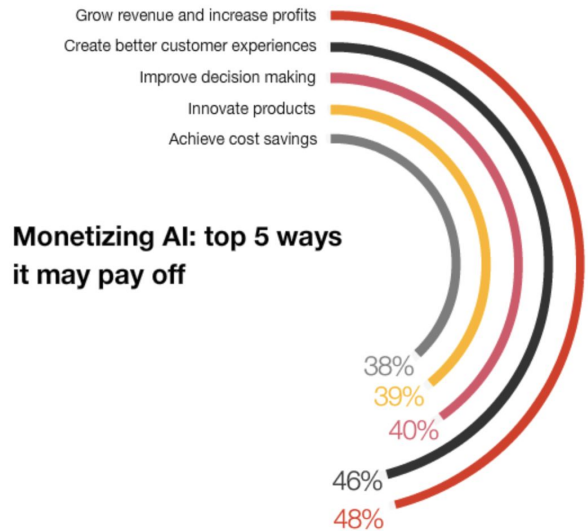**15%** Plan to deploy AI in multiple areas

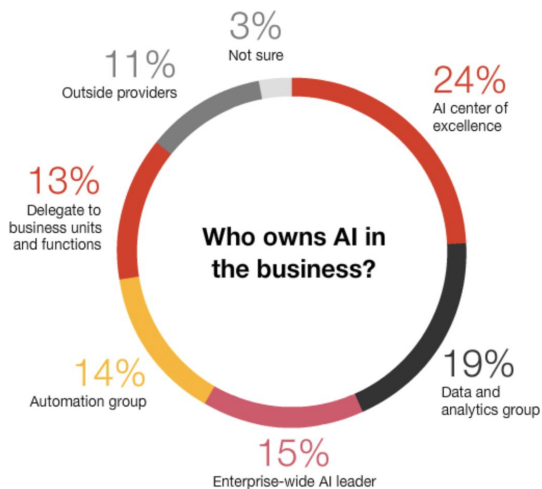**16%** Implemented pilot projects within discrete areas

22% Investigating use of AI

Source: PwC 2019 AI Predictions
Base: 633
Q: How far along is your organization with AI? Select one.

O'Reilly - Overcoming barriers to AI adoption, 2019; Pwc - 2019 AI Predictions, Six AI priorities you can't afford to ignore;

THE AI POTENTIAL BY INDUSTRY, WITH **LEGEND** AND **MAX VALUE** .

Annual Growth by 2035	Profit Percentage Increase by 2035	Potential AI Consumption impact	AI Percentage Spending Change in 3 Years	Projected Percentage GDP Increase by 2030	Potential AI Value Over Standard Analytics	DL Aggregated $ Impact in Trillions	DL Percentage of Industry Revenue
4.8	84%	5	12%	20.5%	5	$0.8 Trillions	12%

Accenture, Fueling Industry Growth | Accenture, How AI Boosts Industry Profits and Innovation | Pwc, Sizing the prize: What's the real value of AI for your business and how can you capitalise? | Stanford, Value Chain Innovation: The Promise of AI, 2018
Statista, Projected increase of GDP due to artificial intelligence by industry sector in 2030 | McKinsey, Notes from the AI frontier: Insights from hundreds of Use Cases, 2018 | Tractica, Artificial Intelligence Hardware and Software Infrastructure 2018

Monetizing AI: top 5 ways it may pay off

- Grow revenue and increase profits — 48%
- Create better customer experiences — 46%
- Improve decision making — 40%
- Innovate products — 39%
- Achieve cost savings — 38%

Source: PwC 2019 AI Predictions
Base:1,001
Q: What value do you expect from your AI investments? Top-three ranking

Who owns AI in the business?

- 24% AI center of excellence
- 19% Data and analytics group
- 15% Enterprise-wide AI leader
- 14% Automation group
- 13% Delegate to business units and functions
- 11% Outside providers
- 3% Not sure

Source: PwC 2019 AI Predictions
Base: 1,001
Q: How will you implement and govern AI in 2019?

NExTT FRAMEWORK

Artificial Intelligence Trends in 2019

TRANSITORY — NECESSARY — EXPERIMENTAL — THREATENING

INDUSTRY ADOPTION (High / Low) vs MARKET STRENGTH (Low / High)

- Open source frameworks
- Facial recognition
- Edge computing
- Conversational agents
- Predictive maintenance
- Cyber threat hunting
- Medical imaging & diagnostics
- Synthetic training data
- E-commerce search
- Drug discovery
- Back office automation
- Language translation
- Crop monitoring
- Anti-counterfeit
- Check-out free retail
- Auto claims processing
- Reinforcement learning
- Autonomous navigation
- Advanced healthcare biometrics
- Clinical trial enrollment
- Network optimization
- Next-gen prosthetics
- GANs
- Federated learning
- Capsule Networks

- ● Application: Computer vision
- ● Application: Predictive intelligence
- ● Application: Natural language processing/synthesis
- ● Infrastructure
- ● Architecture

CBINSIGHTS WHAT'S NEXT IN AI?
Artificial Intelligence Trends, 2019

Top five AI challenges for 2019

- Ensuring that AI systems are trustworthy — 37%
- Managing the convergence of AI with other technologies — 36%
- Moving AI initiatives from pilot to production — 29%
- Training current employees to work with AI — 36%
- Measuring AI's return on investment — 31%

Source: PwC 2019 AI Predictions
Base: 1,001
Q: Which AI data-related issues will be the top priorities for your organization in 2019?

Pwc - 2019 AI Predictions, Six AI priorities you can't afford to ignore; CB Insights - What's Next in AI? Artificial Intelligence Trends 2019; McKinsey&Company, Global Institute Analysis - The promise and challenge of the age of artificial intelligence, 2018;

We leverage
ARTIFICIAL INTELLIGENCE via

Business Expertise | Cognitive Systems
Hardware | Software | Domain Expertise

towards
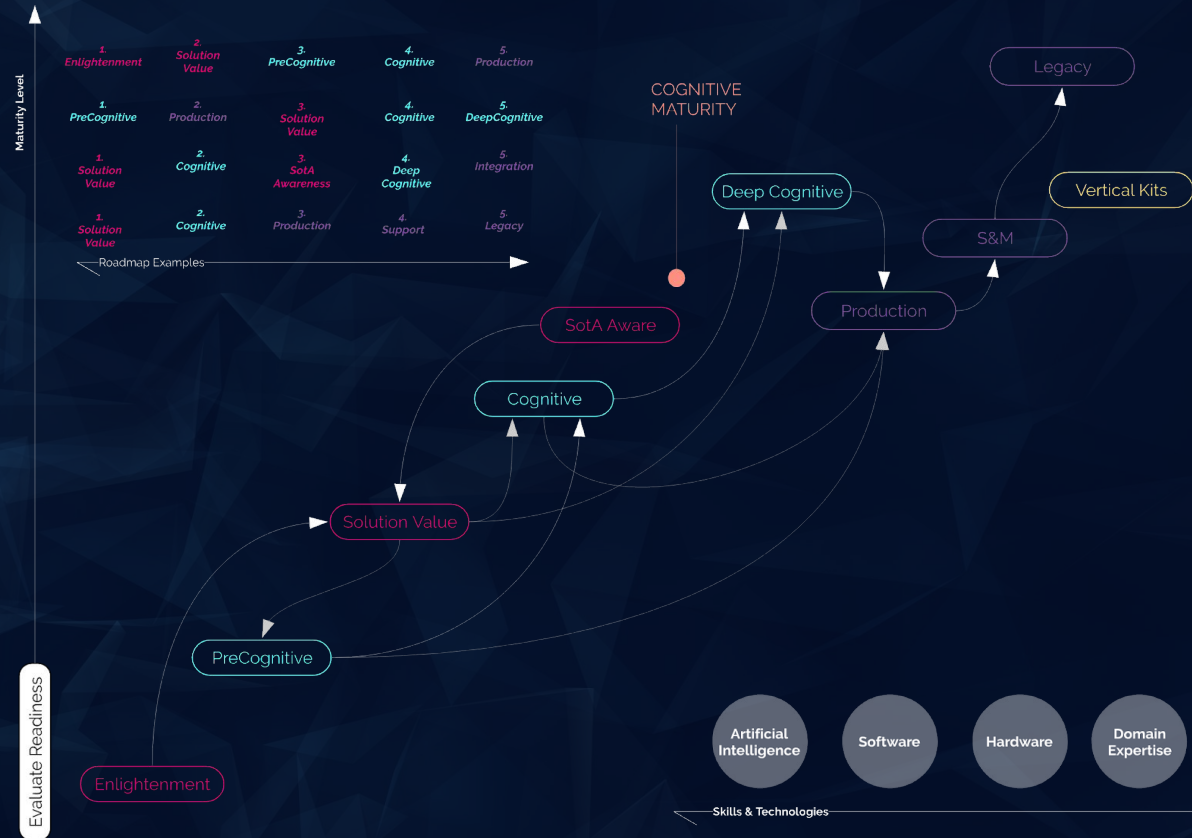**TECHNOLOGY INNOVATION AND MARKET LEADERSHIP.**

2
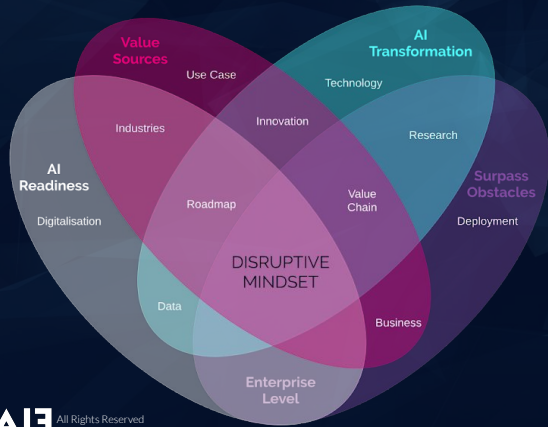
We operate with an

AI DISRUPTIVE STRATEGY via

AI Readiness | Discerning Value | AI Transformation
Leveraging Obstacles | Enterprise Level Use

to master
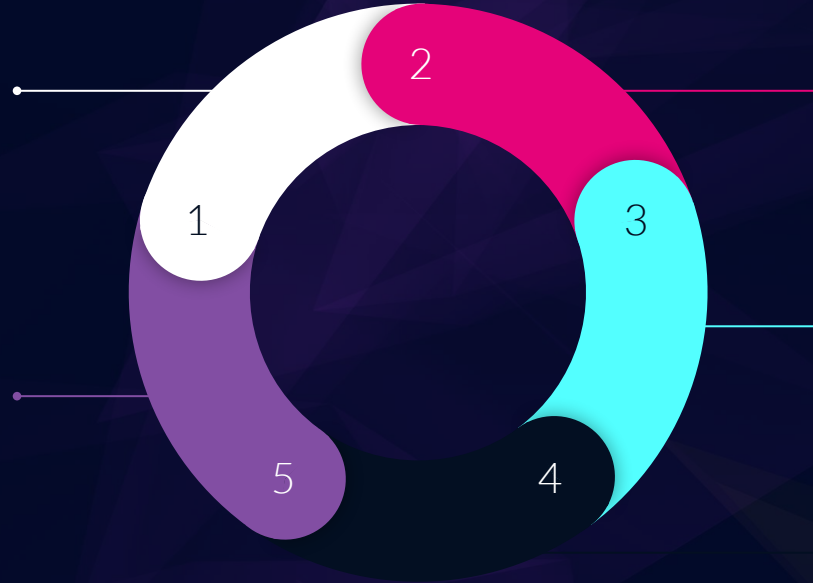**VALUE CREATION**
COGNITIVE LEADERSHIP .

3

AI Readiness

In depth readiness analysis focusing on key technology and business indicators, to derive existing gaps, advantages and potential.

Discerning Value Sources

Mastermind the unique AI positioning for serving best interests, through understanding key value-driving functions and analysing the market and organizational culture.

AI Transformation

Perceiving AI as more than a tool or technology that can enhance the existing business, by embracing it as a transformative capability that can drive novel sources of business value.

Enterprise Level

Driving optimal AI value through strategic AI implementations that focus on enterprise scale and organisational governance, instead of isolated projects.

Surpassing Obstacles

Acting in the momentum by turning the existing obstacles - data challenges, lack of AI talent, technology hurdles, regulations - into competitive advantage enablers.

1
2
3
4
5

AI DISRUPTIVE STRATEGY.
COGNITIVE SHIFT from project to **PRODUCT MINDSET** .

We provide our

COGNITIVE FRAMEWORK

Cognitive Engagement | Cognitive Kits |
Cognitive Lattice | Maturity Curve

for

BUSINESS INNOVATION
AND ENHANCEMENT .

4

COGNITIVE ENGAGEMENT.

Engagement → AI Readiness → Cognitive Kits

Cognitive Officer

Cognitive Business — Finance — Operations — Management — Processes
1. Business Innovation

Cognitive Development — Artificial Intelligence — Data Science — Technology — Research
2. Technology Innovation

Cognitive Production — Production — Maintenance — Support — Infrastructure
3. Delivery Innovation

Product Owner

Domain Experts

Cognitive Governance

Cognitive Management

- ➔ Proprietary cognitive framework composed of Business, Development, Operational, Vertical Kits.
- ➔ Covering the entire value chain cycle of a business.
- ➔ Offering closed loop governance for all cognitive demands.
- ➔ Used for both existing business enhancement and business innovation through AI.

KITS SUMMARY

Assessment Kit				
Business Kits	**Dev Kits**	**Ops Kits**	**Vertical Kits**	
Enlightenment	PreCognitive	Integration	AI Ops	AI DB
Solution Value	Cognitive	Support & Maint.	Forecasting	Profiling
SotA Awareness	DeepCognitive	Legacy AI	IoT	NoCodeAI

BUSINESS	**DEVELOPMENT**	**OPERATIONAL**	**VERTICAL**
Enlightenment	**Pre-Cognitive**	**Integration**	**AI Operations**
Getting in shape for tackling cognitive solutions.	Bridging the readiness gap towards cognitive solutions.	Expand solution to a secured end-to-end implementation.	Enhancing IT Operations with AI.
			➔ Refining Data Analysis.
➔ Leadership Education. ➔ Cognitive Board Formation. ➔ Cognitive Processes Adoption. ➔ Deep Industry Insights. **1**	➔ Data Collection. ➔ Infrastructure & Automation. ➔ Outcome Prediction. ➔ PreCognitive System Engineering. **1**	➔ SaaS and On Premise Deployment. ➔ CI/CD and Release Strategy . ➔ Existing Services API Integration. ➔ Security Layer Development. **1**	**AI Databases**
			AI optimised Databases.
			➔ Fast Data Throughput.
Solution Value	**Cognitive**	**Support & Maintenance**	**Forecasting**
Defining a cognitive solution for a specific use-case.	Apply existing SotA solutions to well defined industry use-cases.	Ongoing models maintenance, monitoring and management.	Prediction based on past data & trends.
			➔ Insights for Future.
➔ Identifying Cognitive Opportunities. ➔ Selecting High-Priority Use-cases. ➔ Evaluating Business Value. ➔ Implementation Roadmap. **2**	➔ Standard Use Case Implementation. ➔ Similar Use-case Translation. ➔ Standard Cognitive Adoption. ➔ Cognitive Model Engineering. **2**	➔ Cognitive Metrics Evaluation. ➔ Software patches & fixes. ➔ Notification Systems Integration. ➔ Continuous Retraining of Existing Models. **2**	**User Profiling**
			User portraits for decision making.
			➔ Targeted Services.
State of Art Awareness	**Deep Cognitive**	**Legacy**	**Internet of Things**
Maintain client's competitive advantage and ROI.	AI pioneering and surpassing the SoTA cognitive systems.	Restoring and modernizing legacy cognitive solutions.	AI Integrated with Edge Devices.
			➔ Hardware Integration.
➔ Cognitive Market Updates. ➔ Monitoring of Competition. ➔ Novel Cognitive Proposals. ➔ Adapting to Business Dynamics. **3**	➔ Novel Models for Specific Use Cases. ➔ Above SotA Cognitive Model R&D. ➔ High-Risk High Reward. ➔ Deep Cognitive Model Engineering. **3**	➔ Update to Industry Tools & Standards . ➔ Entire Evolution Process Government. ➔ Cognitive Legacy Focus. ➔ Models Re-Engineering, SotA Upgrade. **3**	**No Code AI**
			AI usage without coding or tech skills.
			➔ AI Platform.

Cognitive Vectors

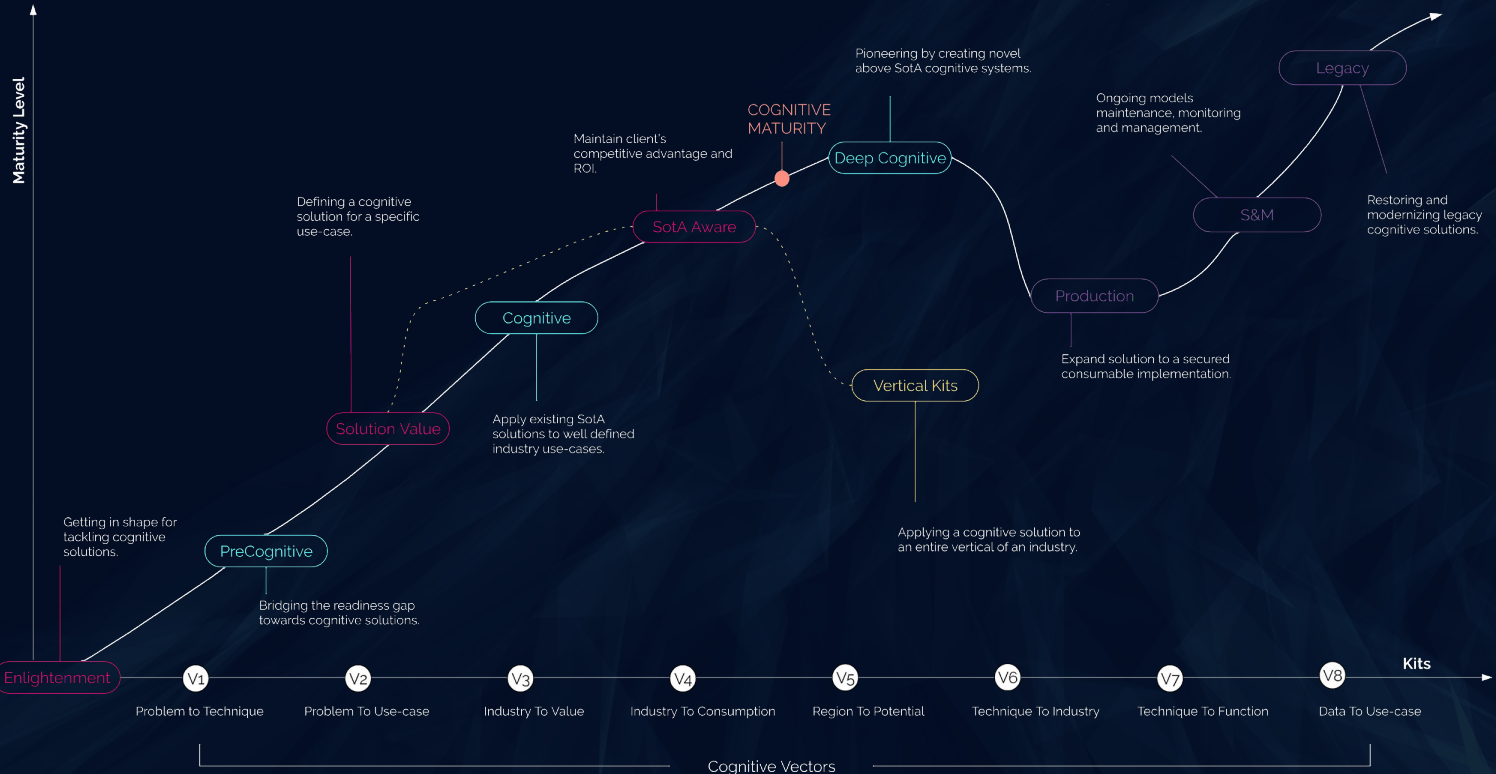|			
Problem-Technique	Problem-Use Case	Industry-Value	Industry-Consumption
Region-Potential	Technique-Industry	Technique-Function	Data-Use Case

➜ Roadmap towards Cognitive Maturity.

➜ Our portfolio covers the entire transformative cycle.

● Business Kits   ● Development Kits   ● Production Kits   ● Vertical Kits

CURVE OF MATURITY.

Maturity Level

Pioneering by creating novel above SotA cognitive systems.

COGNITIVE MATURITY

Ongoing models maintenance, monitoring and management.

Legacy

Maintain client's competitive advantage and ROI.

Deep Cognitive

S&M

Restoring and modernizing legacy cognitive solutions.

Defining a cognitive solution for a specific use-case.

SotA Aware

Cognitive

Production

Expand solution to a secured consumable implementation.

Solution Value

Apply existing SotA solutions to well defined industry use-cases.

Vertical Kits

Getting in shape for tackling cognitive solutions.

Applying a cognitive solution to an entire vertical of an industry.

PreCognitive

Bridging the readiness gap towards cognitive solutions.

Enlightenment

| V1 | V2 | V3 | V4 | V5 | V6 | V7 | V8 | Kits |
| Problem to Technique | Problem To Use-case | Industry To Value | Industry To Consumption | Region To Potential | Technique To Industry | Technique To Function | Data To Use-case | |

Cognitive Vectors

ROADMAP EXAMPLES.

AI Readiness Assessment

BEGINNER

1. Enlightenment
- Leadership Education
- Cognitive Board Formation
- Cognitive Processes Adoption
- Deep Industry Insights

2. Solution Value
- Identify Cognitive Opportunities
- Selecting High-Priority Use Cases
- Evaluating Business Value
- Implementation Roadmap

3. Pre-Cognitive
- Data Collection
- Infrastructure Automatisation
- Outcome Prediction
- PreCognitive Model Engineering

4. Cognitive
- Standard Use Case Dev
- Similar Use-case Translation
- Standard Cognitive Adoption
- Cognitive Model Engineering

5. Integration
- Optimal Deploy SaaS & On Premise
- CI/CD and Release Strategy
- Services API Integration
- Security Layer Development

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1. Pre Cognitive
- Data Collection.
- Infrastructure Automatisation
- Outcome Prediction
- PreCognitive Model Engineering

2. Integration
- Deploy SaaS & On Premise
- CI/CD and Release Strategy
- Services API Integration
- Security Layer Development

3. Solution Value
- Identify Cognitive Opportunities
- Selecting High-Priority Use Cases
- Evaluating Business Value
- Implementation Roadmap

4. Cognitive
- Standard Use Case Dev
- Similar Use-case Translation
- Standard Cognitive Adoption
- Cognitive Model Engineering

5. Deep Cognitive
- Novel Models for Specific Use Cases
- Innovative Cognitive Model R&D
- High-Risk High Reward
- Deep Cognitive Model Engineering

LEADER

1. Solution Value
- Identify Cognitive Opportunities
- Selecting High-Priority Use Cases
- Evaluating Business Value
- Implementation Roadmap

2. Cognitive
- Standard Use Case Dev
- Similar Use-case Translation
- Standard Cognitive Adoption
- Cognitive Model Engineering

3. SotA Awareness
- Constant Engagement
- Cognitive Market Updates
- Monitoring of Competition
- Novel Cognitive Proposals
- Business Dynamics Adaption

4. Deep Cognitive
- Novel Models for Specific Use Cases
- Above SotA Cognitive Model R&D
- High-Risk High Reward
- Deep Cognitive Model Engineering

5. Integration
- Optimal Deploy SaaS & On Premise
- CI/CD and Release Strategy
- Services API Integration
- Security Layer Development

PLAYER

1. Solution Value
- Identify Cognitive Opportunities
- Selecting High-Priority Use Cases
- Evaluating Business Value
- Implementation Roadmap

2. Cognitive
- Standard Use Case Dev
- Similar Use-case Translation
- Standard Cognitive Adoption
- Cognitive Model Engineering

3. Integration
- Optimal Deploy SaaS & On Premise
- CI/CD and Release Strategy
- Services API Integration
- Security Layer Development

4. Support & Maintenance
- Cognitive Metrics Evaluation
- Software patches & fixes
- Notification Systems Integration
- Continuous Retraining of Existing Models

Our proprietary
COGNITIVE KITS

Business Kits | Development Kits
Operational Kits | Vertical Kits

can
**ENGAGE ALL STRUCTURES
AND MATURITY LEVELS .**

5

AI Readiness

Determining the AI readiness level.

➔ DESIRE FOR AI ENGAGEMENT
➔ OPENNESS TO STRATEGIC INVESTMENT
➔ OPENNESS TO INNOVATE AND ADAPT

Digitalization Readiness	Culture Readiness	Business Readiness	Infra & Data Readiness	Methodology Readiness	Strategy & Vision
Analysing the impact of digital technologies in the business model, revenue streams and value production.	Analysing the openness to, understanding of, and engagement in the key cognitive tenets. Understanding key values of the company.	Entire value-chain analysis of products, services, sales strategy, market fit, client retention, partners, financial maturity, and risk prevention.	Assessing key data sources, pipeline flows, and integrated tools for cognitive systems adoption.	Overall evaluation of existing processes, methodologies, governance, and ownership.	Evaluating the company's history, current vision, long term goals and strategy for cognitive fitness.

Enlightenment

Getting in shape for tackling cognitive solutions.

➔ COGNITIVE COMPETITIVE ADVANTAGE
➔ BUSINESS AI TRANSFORMATION
➔ COGNITIVE BUSINESS FOUNDATION

INTRODUCTORY	PLAYER	LEADER

C Level Engagement

Building fundamental cognitive awareness at the executive level, in terms of technology, business, and leadership.

Strategy Alignment

Infusing cognitive tenets and schemes in the existing business strategy, for cognitive goals alignment.

Methodology Implementation

Design and implement essential cognitive processes and plans for agile and proactive implementation flows.

Deep Industry Analysis

Deep Industry and Competition analysis for strategy alignment to existing cognitive trends.

Management Engagement

Engaging and preparing all leadership levels for an integrated cognitive engagement, focused on impact and risk assessment.

Cognitive Organisational Model

Governance transformation for centralised cognitive capabilities and decision rights. Devise competitive advantage strategy,

20

Solution Value

Defining a cognitive solution for a specific use-case.

➔ AI STRATEGY FOUNDATION
➔ AI PROCESSES CONSOLIDATED
➔ DESIRE TO ENGAGE IN AN AI USE CASE

INTRODUCTORY   PLAYER   LEADER

Value Chain Analysis

Analysing and mapping the key value drivers in a business unit, in preparation for cognitive value creation.

Business Case Identification

Use Case formulation based on the value chain analysis, proposed timeline and resource availability.

High Level Roadmap

End to end high-level implementation roadmap including strategy, methodologies and timeline.

Market Dynamics Analysis

Selected use case tailored market research for business plan optimisation, with a focus on value determination and delivery.

Actionable Roadmap

Detailed roadmap creation for product coordination, including tasks prioritization, team formation, team integration processes, and financial analysis.

Risk & Impact Assessment

Tailoring the Use Case based on potential impact, core scenario predictions, and implementation risks assessment.

21

SotA Awareness

Maintaining competitive advantage and Return of Investment.

➔ AI STRATEGY FOUNDATION
➔ AI PROCESSES CONSOLIDATED
➔ DESIRE TO ENGAGE IN AN AI USE CASE

INTRODUCTORY		PLAYER			LEADER
Technology Updates	**Enhancement Proposals**	**Market Updates**	**Competition Updates**	**Business Awareness**	**Business Innovation**
Deliver technology update reports for a specific solution value based on technology trends.	Comparing implemented solution value with technology market trends and proposing enhancements.	Providing market analysis for a specific solution value. Keep to date with solution translational to possible new verticals.	Competition research and reports for devising differentiation factors and responding strategies.	Staying connected to the business dynamic to properly react when the cognitive systems requires adaptation.	Comprehensive analysis of both external and internal factors for new business model or product creation.

PreCognitive

Bridging the gaps towards cognitive solutions.

➔ COGNITIVE SOLUTION VALUE
➔ COGNITIVE BUSINESS STRATEGY
➔ NO DATA OR COGNITIVE INFRASTRUCTURE

INTRODUCTORY   PLAYER   LEADER

Problem Formalisation	**Cognitive Infrastructure**	**One Type Data Infrastructure**	**Preliminary Model Engineering**	**Multi Source Data Ingestion**	**1st Cognitive Model**
Focus on a low level technical definition of the solution value based on the existing business roadmap, desired deliverables, and cognitive vectors.	Proper cognitive infrastructure adoption for robust and efficient AI systems integration.	Building and integrating a data type source into a pre processing and data analysis pipeline for a specific solution value.	Building pre cognitive models which deliver value, stabilize the cognitive infrastructure, as part of the transition towards cognitive models.	Building and integrating multiple data type sources into a pre processing and data analysis pipeline for a specific solution value.	Transitioning towards cognitive solutions by implementing a cognitive model for the proposed solution value.

23

Cognitive

Applying SotA Solutions to well defined industry use cases.

➔ COGNITIVE SOLUTION VALUE
➔ COGNITIVE DATA STRATEGY
➔ COGNITIVE INFRASTRUCTURE

INTRODUCTORY			PLAYER		LEADER
Problem Formalisation	**Optimal Solution Selection**	**Standard Use Cases**	**Data Collection & Processing**	**Translational Use Cases**	**Advanced Optimisation Techniques**
Focus on a low level technical definition of the solution value based on the existing business roadmap, desired deliverables, and cognitive vectors.	Researching the current available technical solutions for best approach for the solution value at hand.	Focus on using battle-tested cognitive models for solution values that can be developed via already standardised Use Cases.	Implementing a data strategy for proper data collection based on solution requirements, and pre-processing based on technology needs.	Focus on translating acknowledged cognitive models for solution values that can be developed via similar but unapplied Use Cases.	Applying a diverse range of advanced optimisation techniques for achieving outstanding model performance.

24

DeepCognitive

Pioneering novel State-of-Art cognitive systems development.

➔ COGNITIVE SOLUTION VALUE
➔ DESIRE TO PUSH THE LIMITS OF AI
➔ HIGH RISK HIGH REWARD MINDSET

INTRODUCTORY

PLAYER

LEADER

Problem Formalisation

Low level technical definition of the solution value based on the existing business roadmap, desired deliverables, and cognitive vectors.

Solution Proposals

Proposing several solution approaches guided by the existing technology and academic trends.

Novel Use Cases

Building SotA cognitive models for novel use cases.

Advanced Data Creation

Employing entire data governance for achieving optimal data distribution for the solution value. Focus on creating above SotA models.

Academic & Market Analysis

In depth academic literature review and market analysis for deriving key factors that shall guide the cognitive model R&D process.

Optimal Hypothesis Search

Research for innovative above SotA cognitive models in challenging and high-reward Use Cases. Hypothesis Set Formulation, Evaluation, and Convergence

25

Production

Expand cognitive solution to a secured consumption model.

➜ COGNITIVE INFRASTRUCTURE
➜ (PRE/DEEP) COGNITIVE MODEL
➜ READINESS TO DERIVE VALUE FROM AI

INTRODUCTORY   PLAYER   LEADER

Models Integration

Seamless deployment and integration of cognitive models into production ecosystem.

End to End Infrastructure Optimisation

Tailoring the existing infrastructure for proper model integration.

Production System Development

Taking care of any software or hardware development needs for cognitive model integration.

Cognitive Release Strategy

Devising a cognitive strategy for release cycle governance. Creating and integrating new infrastructure blocks.

Cognitive Testing & Security

Advanced model testing and security enhancements for a secured system run and user experience.

Automatic Metrics Monitoring

Creating autonomous monitoring systems for efficient response time and history tracking.

26

Support

Proactive cognitive live engagement.

➜ DEPLOYED COGNITIVE MODEL
➜ COGNITIVE BUSINESS STRATEGY
➜ DESIRE TO RETAIN COGNITIVE VALUE

INTRODUCTORY   PLAYER   LEADER

Software Patches & Bug Fixing	**Online Documentation**	**Tracking & Notification Systems**	**Cognitive Governance**	**Cognitive Updates**	**Cognitive Management Service**
Delivering bug fixing and software patches under a proper development, staging and production strategy.	Proper documentation of the entire cognitive model development cycle and its running characteristics.	Implementation of automatic tracking and notification systems for fast reaction times.	Fast monitoring and reaction to relevant cognitive metrics as needed. Deriving insights from history metrics.	Models re-training and updates based on newly acquired data from different sources. Continuous testing of optimisation techniques for model improvement.	Ongoing maintenance, monitoring, and management of all cognitive systems across the company. Potential for multi model integration.

Legacy

Cognitive

INTRODUCTORY

PLAYER

Technology Stack Update

Adapting the existing tools and frameworks of a deployed cognitive system to latest versions.

Adapting Existing Infrastructure

Updating existing infrastructure to serve the new technology stack needs.

Testing Coverage

Proper testing procedure including Acceptance Tests, System Tests, Integration tests, Unit tests.

New Tools Integration

Integrating or exchanging new tools or frameworks in the system, while maintaining its core functions.

Up to Date Enhancements

Proposing and adding new improvement features to the refactored cognitive system. Models upgrades to SotA versions.

Data & Architecture Refactoring

Enhancing data distribution with up to date datasets, and redesigning the existing cognitive architecture to meet SotA requirements.

We bring
COGNITIVE EXPERTISE via

Academic Background | Industry Experience
Skills & Technologies| Interdisciplinary Expertise

to help
CLIENTS ACHIEVE
COGNITIVE MATURITY .

SAMPLE CASE STUDIES.

Cyberphysical systems simulation for real-time production cycle optimization.

Scheduling pipelines for processing a variety of historical events.

Automation workflows for cluster turn up and turndown in storage layers.

Capacity planning by predicting resources requirements.

Anomaly detection on monitoring data from **production series**.

Airport ground lighting system management.

Planning critical **railway** business processes.

Providing internet via SMS/Voice, with no WIFI/Data Connection.

Real time abstraction for optimized **water** management analytics.

Medical Imaging Analysis for Prevention and Diagnostics (CT, fMRI).

App to promote a healthy lifestyle among children and encourage a better relationship with **school doctors**.

SNNs biology based research for single-shot learning.

Fish ports process management and optimisation for reducing cost and carbon emissions, and increasing renewable energy production.

Cloud detection from satellite observations, using multispectral images.

Land classification from multiple, complementary remote imaging sources.

Geospatial data processing.

2D Texture Analysis in complex and cluttered images.

3D Motion Planning, Sensor fusion and filtering for autonomous navigation of **drones** through dense urban environments.

Cloud framework for the coordination of large projects in **AEC industry**.

Strategic intent extraction from Text, Images, Audio, Videos, IoT, Sensors.

Malicious intent (ex. weapons) awareness, from live-stream video analysis for airports, schools, shops.

No Code platform for citizens and **industry experts** to quickly create and deploy AI models without deep AI knowledge.

Agriculture supply and demand prediction and process optimisation.

Embedded software platforms development for proprietary application specific integrated circuits.

Free space detection around vehicles, localization and the determination of sensor performance.

Microstrip Low Pass Filter for controlled impedance routing and matching in circuits.

Schematic designs, simulations and electrical testing for various **automotive** transmission projects.

Stress analysis, steel/composite structures design, 3D modelling in **structural engineering**.

Numerical models of dry friction between nominally rough surfaces.

CNT based Brain Computer Interface R&D for optical and electrical recording and stimulation.

Research in therapeutic solutions for **neurodegenerative** diseases.

Financial Analysis for predictions and recommendations.

Autonomous decision systems for **smart cities**.

OCR Engines for **financial** processing.

Research in spike processing methods.

INSIGHTS
CASE STUDIES.

Personal Digital Banking
Budget Forecasting.
User Profiling.
Personalized Recommendations.

BMI Development
Neurodegenerative Diseases.
Neuroscience Research.
Diseases Treatment.

Digital Health Coach
Health Promotion.
Disease Prevention.
Digital Coaching.

No Code AI
Empowering AI Usage
No Coding Required.
No Deep AI knowledge Required.

MRI Infrastructure
Disease Research & Prediction.
MRI in Psychology.
Virtual Reality & Robotics.

Malicious Intent Awareness
Preventing Dangerous Situations.
Gun Detection.
Identity Recognition & Tracking.

SKILLS . TECHNOLOGIES .

AI Areas: NLP, Computer Vision, Game Theory, RPAs, Autonomous Systems, Large Scale, Recommender Systems, Algorithm Analysis & Design, Supervised Learning, Unsupervised Learning, Reinforcement Learning, Control Theory, Robotics, Signal Processing, IoT.

AI Core Tools: SciKit, Keras, FastAI, Matlab, Tensorflow, Pytorch, OpenCV, LightGBM Xgboost | Weka.

AI Techniques: Transfer Learning, Deep Learning (FFN, CNN, RNN, GAN), Dimensionality Reduction (PCA, tSNE), Ensemble Learning (Random Forest, Gradient Boosting), Instance Based (KNN), Decision Tree Learning, Monte Carlo Methods, Linear Classifiers, Clustering (K-means, Tree Based, DB Scan), Statistical Inference (Bayesian), Markov Processes, Regression Analysis (Linear, Logistic, Lasso), Descriptive Statistics (Confidence Intervals), Naive Bayes Classifiers, Genetic Algorithms, SVM, Classical AI (Search, Constraint Propagation, Planning), Data Science Techniques, Search.

AI Problem Types: Classification, Continuous Estimation, Clustering, Optimisation, Anomaly Detection, Ranking, Profiling, Recommender Systems, Data Generation.

AI Data Types: Images, Video, Audio, Text, Time Series, Structured/Semi-Structured.

SCIENCES: Neuroscience, Cognitive Sciences, Brain Inspired AI, EEG, Optogenetics, BMIs, Applied Mathematics, Physics, Biology, Finance, Chemistry, Health, Medical Imaging, Medicine, fMRI, EKG, Geospatial, Numerical Simulation, Scientific Writing, Manufacturing, Production, Transportation, Logistics, Agriculture, Social, Security, Automotive.

SW Knowledge: Container Management, Cloud Computing, Deployment Strategy, Distributed Systems, CI-CD, Database Management, Devops, Mobile, Web, Embedded,MicroServices, Security, Simulations, Frontend, Backend,High Performance

SW Languages: Python, C, C#, Java, JavaScript, TypeScript, C++, HTML, CSS, Bash, .NET, F#, Julia.

SW Tools: Spring, SQL, Android, iOS, ElasticSearch, React, Maven,Gradle, Kafka, Ionic, Jenkins, Flask, RabbitMQ, Azure, GCC, AWS, Gearman, Angular, GIT, Kubernetes, Swarm, Rancher, Anaconda, NodeJS, Hibernate, Liquibase, Jenkins, Spinnaker, scrapy, FlytOS, Junit, Mockito, Azure Cloud, Dataflow, Apache Beam, Tomcat, Kibana, Grafana, Amazon Cloud, SQLite, Firebase, Logstash, Fluentd, Linux, Docker, Unity 3D, ROS, Docker.

HW Knowledge: Altium Designer, LTSpice, Low Level Drivers, Firmware Test, Mechanics, Radio Communication, ASIC Driver Development, Memory Mapping, Signal Processing, Requirements Engineering, Embedded Applications, DSP, Signal Conditioning, Systems Control.

HW Skills: Simulation Modelling, Firmware, Analog Design, Digital Design, Mechanics, FPGA, MCU, Layout, IC Design, SW.

HW Tools: RSL10 SDK, Matlab, Eagle, Solidworks, AUTOSAR, LabView , Catia.

SAMPLE OF PROFILES.

AI | PhD | Tech Lead

•Python •Java •C++ •C •Bash •SciKit •Tensorflow •Keras •Pytorch •FastAI •OpenCV •Machine Learning •Computer Vision •NLP •RL •Data Science •GIT •Android •Linux •Kafka •Flask •Gearman •Anaconda •RabbitMQ •Docker •Weka •Container Management •Distributed Systems •Deployment Strategy •Devops •Medical Imaging •Medicine •Blockchain •Software Engineering •Remote Sensing •Geospatial Data Processing •Scientific Writing

AI | Tech Lead

•Python •Java •JS •Bash •SciKit •Tensorflow •Keras •Pytorch •FastAI •OpenCV •Machine Learning •Computer Vision •NLP •RL •Data Science •GIT •Spring •ElasticSearch •Kafka •Flask •Scrapy •Dataflow/Apache •SQLite •Docker •Dialog Flow •Recommender Systems •Chatbots •Container Management •Distributed Systems •Devops •Deployment Strategy •Blockchain •Software Engineering •Web Scraping •Big Data Processing

HW | Phd | Tech Lead

•Software •Firmware •Analog Design •Digital Design •Mechanical •RSL10 SDK •AUTOSAR •Matlab •LabView •Eagle •Catia •Solidworks •Altium Designer •LTSpice •Low level drivers •ASIC Driver Development •Embedded Applications •Firmware Test •Memory Mapping •DSP •Mechanics •Signal Processing •Signal Conditioning •Radio Communication •Requirements Engineering •Systems Control •Simulation Modelling

SW Tech Lead

•Python •Java •C# •C++ •C •JS •Bash •NET •HTML/CSS •Spring •ElasticSearch •Kafka •RabbitMQ •Angular 1/2 •NodeJS •FlytOS •Tomcat •Firebase •SQL •React •Ionic •Azure •GIT •Hibernate /Liquibase •Junit / Mockito •Kibana / Grafana •Logstash •Fluentd •Android •Maven •Gradle •Jenkins Pipeline •GCC •Kubernetes •Swarm •Rancher •Jenkins •Spinnaker •Azure •AWS •Docker •Container Management •Distributed Systems •Deployment Strategy •Database Management •Cloud Computing •CI/CD

90% SENIORITY
+75% Advanced Degrees

Can **Handle**   Can **Do**   Can **Teach**

DOMAIN SPECIFIC PROFILES.

Healthcare | Scientist

•Professor at University of Oxford •Professor at Georgetown University •MIT Mind Machine Project •U.S. Army •CIA •NSA •Computational Neuroscience at John Radcliffe Hospital •Neuro-computation •AI •Neurosurgery •Mathematics •Psychiatry •Neuroscience •Crypto-logistics •+80 Research Publications •+35 Patents

Energy | Scientist

•Research Fellow at Cardiff University •Distributed Systems •Cloud Computing •Edge Clouds •Internet of Things •Data Analytics •Software Defined Networks •Intelligent Buildings •Intelligent Infrastructures •Smart Energy Systems •Complex Engineering Workflows •+50 Research Publications •Inventor

Materials | Scientist

• Researcher at Romanian Institute of Microtechnology • Nanotechnology • Characterisation • Nanomaterials • Material Science • MEMS • Spectroscopy • Microfabrication • Microfluidics • Biosensors • Physics • Electrochemistry • Plasma Processing • +300 Research Publications

Physics | Researcher

• Researcher at Babes-Bolyai • Postdoctoral at UCLA and New Brunswick • Relaxation • Diffusion • Spectroscopy • Fast Field Cycling • MRI • fMRI • NMR • AFNI • FSL • SPM • Data Acquisition & Analysis SW • MRI Data Analysis, Acquisition & Interpretation • Atomic Force Microscopy • Dynamic Light Scattering • Materials Engineering • 8 Research Publications

Finance Exec | Expert

• International Business Management & Accounting •Group Financial Controller • KPMG & EY • Projects for €50M to €800M businesses • CFO Services for SME (€5M to €200M) • Financial Modelling & Transformation • M&A Financial Due Diligence • Organisational Design • Business Process Modeling • Strategic Planning • Restructuring • Management Control Systems • Procurement • Risks Management Manufacturing • Software • Professional Services • Real Estate • Media • NGO

Production | Expert

• Nokia (Mobile Phones Manufacturing) • SAP AG (Software) • Getrag AG (Automotive) • Steelcase (Office Solutions) • Ferrero Luxembourg (Confectionery) • Nestle (Food & Drink) • +8 Years of SAP Implementation • Demand Planning • Supply Network Planning • Production Planning Processes • Detailed Scheduling • Material Management to Procure to Pay • Sales & Distribution to Order to Cash and Available to Promise Processes • Test & Test Management • 2nd & 3rd Level Support • Logistics

SPECIFIC DOMAIN EXPERTISE

Research   Expertise   Experience

Cognitive Vectors

The entire development process at both business and technical layers is guided by our set of cognitive vectors designed to focus on developing an optimal solution-market fit.

Problem To Technique

Industry standard mapping of problem types to applicable cognitive techniques, based on inputs, outputs and purpose.

Problem To Use-case

Market cognitive value potential assessment by determining the relevance and necessity of problem types to particular use-cases.

Industry To Value

Deriving strategic business plans based on up to date research in the potential of industries and functions to deliver value through cognitive solutions.

Industry To Consumption

The potential value of applying AI for your sector can be analysed in terms of personalisation, time saved, utility and data availability.

Region To Potential

Awareness of cognitive systems regional impact research, so that our clients can geographically position their AI solutions in the most rewarding contexts.

Technique To Industry

Creating most valuable development plans based on cognitive techniques relevance to industries.

Technique To Function

Creating most valuable development plans based on cognitive techniques relevance to functions.

Data To Use-case

Building data strategies based on existing research in data types relevance for specific use-cases and their overall cognitive potential value impact.

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