

Uni-CARE: Universal Interface via Cloud Archive Repository Express

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Abstract

Uni-CARE—Universal interface has emerged from Cloud Archive Repository Express that utilizes algorithmic machine learning as a “fastlane” without explicitly coding required to bridge the gap between DATA and wiseCIO. Uni-CARE incorporates DATA of digital archiving & trans-analytics with wiseCIO of web-based intelligent service into a triad for content management and delivery (CMD) that orchestrates Anything as a Service (XaaS) by using mathematical and computational solutions to cloud-based distributed problems. This article presents automated universal interface design through cloud archival repository express in CARE for “DNA-like” ingredients with trivial information eliminated through deep learning. Conceptually, Uni-CARE innovates with algorithmic machine learning and introduces *express tokens for information interchange* (eToken) to promote seamless intercommunications among the CMD triad and semantic enrichment of digital archiving via online analytics for XaaS. Specifically, Uni-CARE collaborative with DATA and wiseCIO empowers ordinary users to be UNIQ professionals: such as *ubiquitous* manager on content management and delivery, *novel* designer on universal interface and user-centric experience, *intelligent* expert for business intelligence, and *quinary* liaison with Anything orchestrated as a Service. The novel designer enabled by Uni-CARE automates layouts of control items, containers and/or folders for hierarchical “in-&-out” interactivity, and multi-aspects through bulletins and/or tabs for contextual “self-paced” spontaneity with individual entities (as bodies) extendable/shrinkable. Furthermore, the CMD triad collaborative with DATA and wiseCIO as a whole harnesses *rapid prototyping* for human-computer interfacing and propels cohesive assembly from Anything orchestrated as a Service. More importantly, Uni-CARE enables instant typing online publishing over DATA in eToken, efficient presentation to end-users with diligent intelligence delivered for business, education, and entertainment (iBEE) on wiseCIO through highly robotic process automation.

Keywords: instant typing online publishing, express tokens for information interchange, universal interface through algorithmic machine learning

1. Introduction

Uni-CARE - Universal interface has emerged from Cloud Archive Repository Express without explicitly coding required where the archival repository express utilizes algorithmic machine learning as a “fastlane” to bridge the gap between DATA and wiseCIO. Algorithmic machine learning is now involved in more and more aspects of everyday life through cloud-based content management and delivery (CMD) [Jamest, J. *et al*, 2012]. wiseCIO denotes web-based intelligent service engaging with cloud intelligence outlets [Liang, S. *et al*, 2020], and DATA represents digital archiving via transformed analytics [Liang, S. *et al*, 2021]. Conceptualized as a “fastlane”, Uni-CARE provides mathematical and computational solutions to cloud-based distributed problems to bridge the gap between integral content management over DATA and informative delivery on wiseCIO to get the most from the enterprise asset management system via information technologies and operating technologies [Tripathi, S., Luellwitz, L. & Egge, K., 2020].

Uni-CARE is central to collaborating DATA with wiseCIO into a triad that best serves cloud-based content management and delivery (CMD) through automated universal interface design for better user experience that makes a user centered without often webpage swapping while browsing via wiseCIO and exploring over DATA. It is the automated universal interface that enables users to browse in hierarchical depth via “in-&-out” interactivity and explore in contextual breadth via self-paced spontaneity to aggregate intelligence for business, education and entertainment (iBEE) in support of decision-making [Liang, S. *et al*, 2020/2021].

1.1 Novel Triad for Wonderful CMD Transitioning

Currently cloud-based intelligent services via distributed computing are usually presented as a website that is subject to the management and influence of personnel, such as a webmaster, web designers and end-users. There exist so-called “controversial web personnel” whose large teams often have objectives for the websites that fail to consider the services being offered and could lead to controversial agendas [Line25 for web design ideas, 2009]. For instance, the controversial scenarios would happen among a webmaster, a web designer, and an end-user: the webmaster oversees and ensures that the technical aspects of a website are met; the web designer is usually responsible for the site’s creative aspects; and the end-user is pleasant to discover useful and usable information in support of decision-making.

As a novel effort made to turn *controversial* agendas into *cohesive* advancement that propels large teams united and working together effectively, Uni-CARE to innovate with “DNA-like” ingredients incorporates DATA and wiseCIO into a CMD triad for content management and delivery. As a borrowing term, “DNA” stands for deoxyribonucleic acid that contains units of biological building blocks as a vitally important molecule containing something that makes individuals unique [National Library of Medicine, 2021]. In addition to automated universal interface, CMD triad provides novel solutions via “DNA-like” express tokens for information interchange (eToken) to controversial agendas to support seamless intercommunications among three CMD parties and semantic enrichment from “DNA-like” ingredients to human-computer interfacing that is presentable / renderable through highly robotic process automation [SailPoint, 2020] where algorithmic machine learning plays a key role in integral content management over DATA and informative delivery on wiseCIO. Algorithmically with practical methods implemented as intelligent services, the CMD triad empowers users to be cohesive UNIQ professionals: DATA acts like a webmaster to ensure that the technical aspects of web content management are met, Uni-CARE automates universal interface design on actionability, interactivity and manipulability (AIM) for wiseCIO to be an intelligent expert for information to be discovered through online analytics.

1.2 Chance and Challenge

Both integral content under managed by DATA and informative delivery via wiseCIO are represented in “DNA-like” notations with trivial information eliminated, which makes it easier for Uni-CARE to promote seamless intercommunications in eToken and interoperability via joint tasking services among three CMD parties; archival content development broadly exploits eToken to such an extent that a user can be enabled as a web designer, a webmaster and a database administrator with super ease. Specifically, the user will only need to input “DNA-like” ingredients in dictionary pairs (Key-Value) that are greatly simplified but full of implicit syntactics and semantics in light of algorithmic machine learning. In comparison with traditional web development in HTML/CSS/JS and/or PHP/Python, eToken is so dedicated to human computer interfacing design in abstractions that it only focuses on “what-to-do” without “how-to-do” in detail.

However, the developmental description in dictionary pairs would be too brief for a user to grasp because of the sophistication shifted onto machine learning patterns. Especially a new-hand user would not be quite sure until he/she views the visual interfacing and operates interactively. Furthermore, the similar dictionary pairs may vary human-computer interfacing when being associated with a variety of polymorphous (in different forms of development) and powerful machine learning patterns. Without deep understanding, a designer would be challenged with “wishy-washy” objectives. With Uni-CARE introduced, machine learning supports semantic enrichment transitioning “DNA-like” eToken into a renderable AIM for human-computer interfacing. That is, instant typing online publishing (iTOP) in eToken turns to immediate visual actionability, interactivity, and manipulability with self-paced spontaneity as well. Universal interface perfectly embodies a cohesive professional across the CMD tirad through robotic process automation.

1.3 Major Contribution

Uni-CARE in collaboration with wiseCIO and DATA utilizes “DNA-like” eToken through algorithmic machine learning to achieve “cohesive” UNIQ objectives as follows:

- *Ubiquitous Manager* is everywhere across the CMD triad to harness iBEE and propel cohesive assemblies for XaaS (Section 2 ~ interactive CMD).
- *Novel Designer* is creative to utilize eToken by instant typing online publishing to support universal interface design and user-centric experience without explicitly coding required (Section 3 ~ eToken-based CARE).
- *Intelligent Expert* helps with intelligence for business, education and entertainment where Uni-CARE collaborates as a whole through digital archiving over DATA and intelligent service on wiseCIO (Section 4 ~ analytical iBEE).

- *Quinary liaison* with universal interface for rapid prototyping of human-computer interfacing and cohesive assembly from Anything orchestrated as a Service, which will be discussed (Section 5 ~ Qinary XaaS).

QUINARY liaison with automated universal interface is characterized as queryability, ubiquity, interactivity, novelty and availability onto applicable layouts of control items, containers for browsing in hierarchical depth and multitab aspects for exploring in contextual breadth.

2. CMD Triad Via Algorithmic Interactivity

The CMD triad can be conceptualized into three correlated aspects through algorithmic interactivity: Uni-CARE for iTOP - instant typing online publishing, DATA for iCOM - integral content management, and wiseCIO for iCOD - informative content delivery [Jamest, J., Rajendra, V. & Zhang, Y., 2012] [Liang, S., Leby, K. & McCarthy, P., 2020] [Liang, S., McCarthy, P. & Van Stry, M., 2021] where Uni-CARE cumulates “DNA-like” ingredients to best serve cohesive personnel through CMD tirad, illustrated in Figure 1.

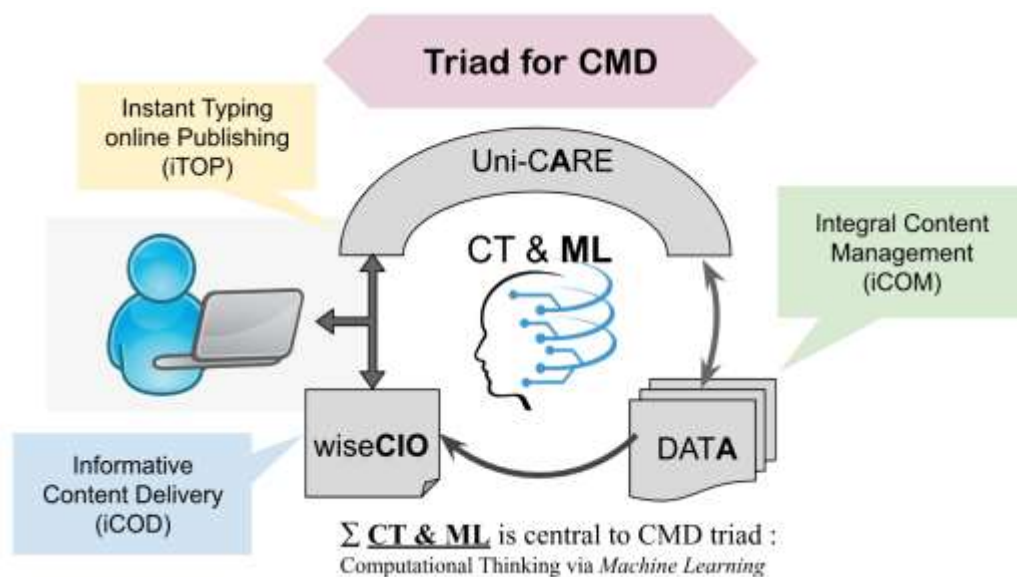


Figure 1. Uni-CARE collaborative with wiseCIO and DATA into CMD triad

The article adopts the term of DNA as “DNA-like” ingredients that contain units of building blocks in the CMD triad for essential, vital, and sufficient information utilized for machine learning automata. “DNA-like” ingredients are often used to express QUINARY characteristics applicable to universal human-computer interfacing, such as queryability, ubiquity, interactivity, novelty and availability onto automated layouts of control items (e.g., buttons, anchors and anything that can be activated to act), containers and/or folders for hierarchical “in-&-out” interactivity, and multi-aspects through bulletins and/or tabs for contextual “self-paced” spontaneity with individual entities (as bodies) extendable/shrinkable.

2.1 Integral Content Management Via Digital Archives

The content under managed integrity as a whole plays a key role in online analytics and procedural automation. Where digital archives ensure the content to be formattable for computing and processing, verifiable for analytical processing, and cohesive for collaborative assemblies without unnecessary redundancies. How to format information and digitize content denotes a means by which a chosen pattern is selected to arrange and store text on a computer or a remote server. The digital pattern promotes integral content management through digital transformation to which algorithmic machine learning can apply.

Traditional web documents stored remotely as content are trivial via DOM (document object model) in HTML/CSS/JSON, and some data retrieved in JSON from a database may have some digitized features for computing and processing, but all of which primarily serves the sole purpose on how to render content as a web page on the client-side device via retrieving and/or downloading. In DATA, digital archives have been introduced in “DNA-like” notations that serve one of multiple purposes – significant content of the integrity ensured without being trivial HTML/CSS/JSON.

Table 1. An illustrative “DNA-like” notation to serve rendering and action

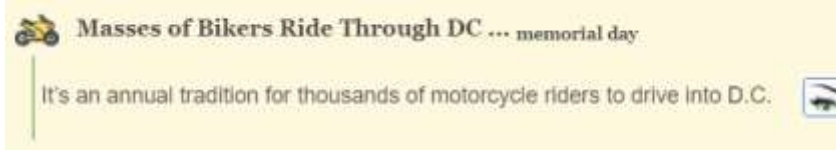
DNA-like notation	Actionable rendering in display and comments
	The DNA-like notation in brief is so profound to express follows:
@NEWS(headLine) imgURL) videoID) newSummary) embedded body..)@	 <p>Where: <i>headLine</i>: Masses of Bikers Ride Through DC.. <i>imgURL</i>: the icon is <i>actionable</i> to play the news video if exists <i>newSummary</i>: It's an annual tradition for thousands of motorcycles ... <i>embedded</i> body of the news with the <i>eye actionable</i> to extend or shrink beneath</p>

Table 1 discloses what “DNA-like” notations look like, and how profoundly they serve multiple purposes. Digital archives are “DNA-like”, intelligent and applicable via algorithmic interactivity to enable UI design with multimedia to play and virtual containers through fold-out / fold-up.

Digitally integrated archives embody Uni-CARE for excellent novelty characterized as actionability, interactivity and manipulability (AIM) to bridge between wiseCIO (delivery) and DATA (management) via algorithmic interactivity. For instance, the little button on the left enables to play the news-related video or news report, and the eye-button fulfills fold-out (to open the news body) or fold-up (to close) alternatively

2.2 Algorithmic Online Analytics Via Machine Learning

OLAP-online analytical processing is a core component of data warehousing implementations enabling fast, flexible multidimensional data analysis for business intelligence (BI) and decision support applications [IBM Cloud Learn HUB, 2022]. The innovative online analytical process (iOLAP), specialized from OLAP, aims to computationally examine facts and information for decision-making with actions to be taken to support the CMD triad as a whole for leading-edge user experience through algorithmic online analytics and machine learning. For instance, Table 1 illustrates a scenario of @NEWS notation that the news “headline” is associated with a brief “summary” and a playable “video”, which makes sense on how to drive machine learning to commit the novel AIM of actionability, interactivity and manipulability.

Machine Learning is about using historical search probabilities in order to generate expected search objectives, solutions, and applications given the user’s input action, query, subject, vocabulary choices, problem, or question [Wolfewicz, A., 2022]. Given lack of context, the response may be generic in scope. Whereas, given repeated uses by an individual or group, the specialization may ensue in order to better fit an intended outcome or focus. Jargon may skew the result culturally or possibly even sub-culturally. This could lead to positive results: quicker utilization and responsiveness; negative results: stereotypical discrimination; irrelevant results: similar nomenclature, but unconnected material; bad results: silo dead ends. Ultimately, machine learning must not be in a vacuum. It must be done with context and in connection to these other features within the utilization of an archival system. As a result, machine learning has been applied to iOLAP based on deep learning that fulfills online service with abilities to learn without being explicitly programmed.

iOLAP is central to the CMD triad through computational thinking via machine learning, as illustrated in Figure 1. It is feasible to apply computational thinking to the universal interface between wiseCIO and DATA, and user-centric experience between Uni-CARE and DATA. Most importantly, a user in general could be a webmaster, a web designer, and/or an ordinary user in light of the CMD triad.

Table 2. Further illustration for the “DNA-like” notation to serve rendering with actions

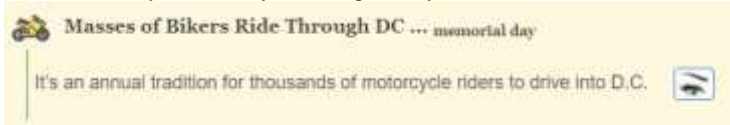
DATA	@NEWs(headLine .) imgURL(videoID.) summary .) emBody)@
Uni-CARE	@NEWs ⇒ headLine *(.) item])@ @NEWs is the key for machine learning items via iterative bracket: *(.) ...] headline is the secondary key for the news AIM-actionability, interactivity and manipulability as follows:
wiseCIO	
AIM	Algorithmic interactivity as follows: <i>headLine</i> : Masses of Bikers Ride Through DC.. <i>imgURL</i> : the icon is <i>actionable</i> to play the news video <i>newSummary</i> : It’s an annual tradition for thousands of motorcycles ... <i>embedded body</i> of the news with the eye <i>actionable</i> to extend or shrink
DATA ←wiseCIO ← Uni-CARE → DATA → wiseCIO	

Table 2, as derived from the previous table, describes multiviews of the NEWs notation with AIM at wiseCIO of actionability for informative delivery, CARE of interactivity for universal interface & experience, and DATA of manipulability on integral content management.

Instant cloud-based archive repository express takes good CARE for CMD between DATA and wiseCIO via machine learning whose AIM is clear to be actionable, interactive, and manipulatable for cloud intelligent service.

2.3 Informative Content Delivery for Decision-Making

Informative content delivery represents digitally transformational processing from integral content (under managed as DATA) to informative content (as processed for use as intelligence). The better user experience signifies the delivery of useful content (to view and think how to use), and usable content to act and interact with the remote service (decision-making).

The valuable significance in a practical approach toward better user experience is fold-out / fold-up of the detailed content (e.g. under the news). At the first glance at the news, the headlining would be the most attractive, secondary is the summary, and following is the video to play (via the icon), and the folder-out of the news will meet the reader’s curiosity, and all of which reflects user-centric experience that is individualized, interactive, and independent.

User-centric experience with informative delivery also aims to promote browsing in hierarchical depth via in-&-out interactivity, and exploring in contextual breadth via self-paced spontaneity. It is not hard to understand by hierarchical interactivity that applied for the news (in Table 2) to folder-out and folder-up without leaving the current context.

As for the contextual spontaneity in breadth for self-paced interest in exploring, a good example is a group of multi-news presented in collaboration with each other. Both universal interface (without explicitly coding) and user-centric experience are applicable through the following example in Figure 2.



Figure 2. Contextual spontaneity in breadth for self-paced interest in browsing

Figure 2 discloses that both universal interface and user-centric experience are applied to how to group multiple news for contextual spontaneity in breadth for self-paced interest in exploring. The contextual spontaneity in breadth is individualized for a user to do self-paced interest in exploring without a fixed order. As a result, user-centric experience has been put in practice through both contextual spontaneity and hierarchical interactivity for the sake of hybrid learning engagement.

Presently, the traditional web content delivery could commit some unfriendliness that is against psychological observations in terms of user interface: a) too much information on a given web page would be destructive to a user’s attention according to Dr. George A Miller [Miller, G.A., 1956]; b) monotony in the mind causes boredom to mental fatigue by repetition and lack of interest in the details of our tasks (that require continuous attention) . That is, too much of the same thing and too little stimulation can cause in its victim an absence of desire and a feeling of entrapment according to “Eight Reasons Why We Get Bored” [Heshmat, S., 2012].

Informative delivery via wiseCIO has been fulfilled for better experience that is user-centric via hierarchical interactivity and user-friendly via contextual spontaneity. The hierarchical interactivity of browsing in depth enables folder-up to help hide too much information from the first glance, and folder-out to disclose the hidden information when desired to go into, which greatly assists the magical number of (7 ± 2) applied to better user experience. The contextual spontaneity in breadth without a fixed order for a user to go in aims at self-paced interest in exploring, which wisely promotes avoidance of boredom in light of monotony in the mind.

3. Uni-CARE in Express Tokens for Information Interchange

Cloud-based and collaborative archive repository express aims to bridge the gap between DATA for integral content management and wiseCIO for informative delivery by using express tokens for information interchange (eToken). CARE creatively introduces eToken that is collaborative and text-based, similar to the popularly-used data formats such as XML and JSON [Microsoft Docs, 2021] in support of intercommunications over the Client/Server architecture. However eToken is more advanced than XML or JSON without explicitly coding required to support seamless intercommunications among CMD triad and semantic enrichment via algorithmic machine learning, as illustrated in Figure 3.

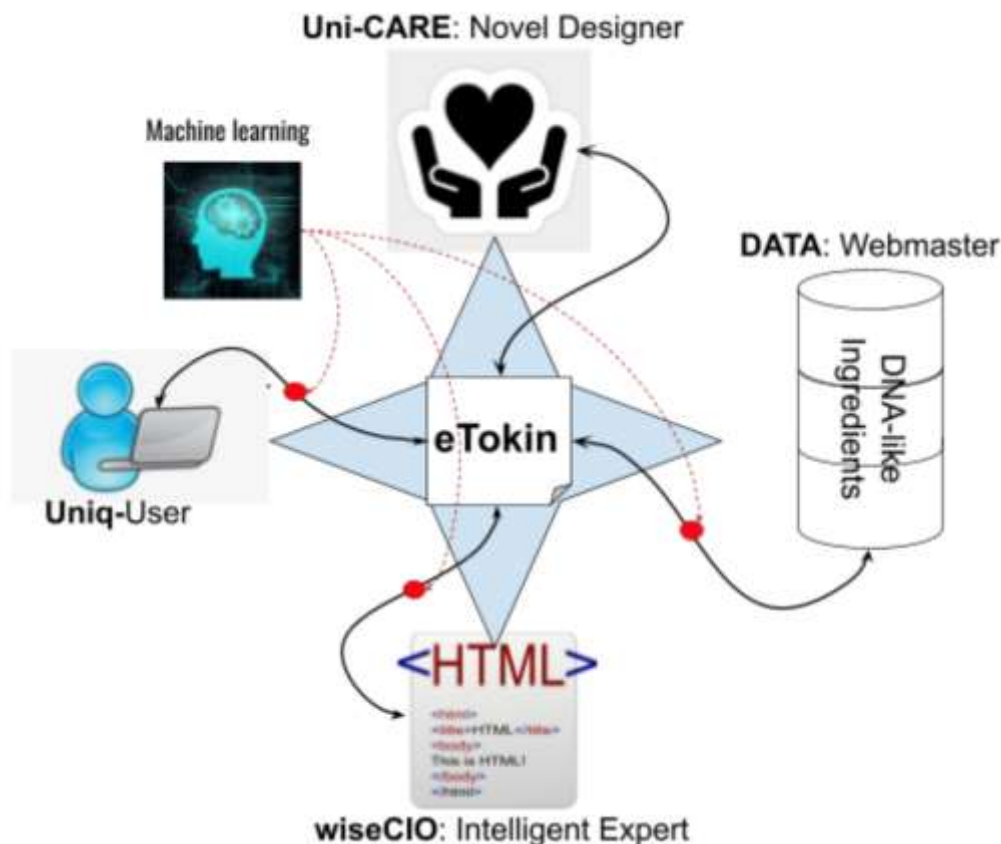


Figure 3. Uni-CARE for machine learning applicable in eToken across the CMD triad

From Uni-CARE’s perspective, the novel designer collaborates through eToken to promote seamless intercommunications (arrows pointing toward) and semantic enrichment (away from eToken) *bidirectionally*

among three parties: unqi professionals, intelligent expert via wiseCIO, and webmaster over DATA. Arrows toward eToken eliminate trivial information to guarantee seamless intercommunications without redundancy, while arrows away from eToken enrich semantics as needed to support integral content management and informative delivery. Both trivial elimination and tactical enrichment are intelligently relying on deep learning experience that makes an end-user UNIQ: *ubiquitous* manager, *novel* designer, *intelligent* expert, and *quinary* liaison with Anything as a Service through machine learning automaton (as denoted by dotted arrows).

By using instant typing online publishing (iTOP), the end-user can play multi-roles as a novel designer via Uni-CARE without explicitly coding, a webmaster with technical aspects of a website ensured over DATA, and an intelligent expert aggregating iBEE on wiseCIO [Tripathi, S., Luellwitz, L. & Egge, K., 2020].

3.1 Archival Repository in “DNA-like” Notations

The archival repository express over DATA involves control items (anchored text, and/or buttons), containers, folders, and semantic patterns that are all digitized and stored in “DNA-like” notations whose integrity should be ensured for the sake of transmissible retrievals with minimal bandwidth and massive online analytics through elastic process automation. Cryptography is optional to apply to secure content through transmission depending on the level of enforced security.

DATA plays a critical role like a webmaster in integral content management that incorporates containers, folders and text-based content for accessibility, and informative delivery without unnecessary page swapping. A folder, taken as an example, usually represents a composite with a title that may be followed by a brief description, and a “switch” that allows an end-user to open the folder with its body extended beneath, and to close by shrinking the extended body – such kind of interactivity is known as browsing in hierarchical depth. E.g.,

```
@NEWS(headLine ,) ...imgURL ,) videoID ,) summary ,) emBody )@
```

The @NEWS(...)@ denotes a news folder in “DNA-like” notations, including a group of ingredients specified with a news headline, an image button (imgURL) to play the news-related video (videoID) if existing, a brief description (summary), and the news body that is extendable and shrinkable. Apparently how to render the folder via interactivity remains unspecified. Semantic enrichment can apply onto @NEWS by machine learning automata (as illustrated by dotted arrow lines in Figure 3).

3.2 Express Tokens for Information Interchange (eToken)

Uni-CARE introduces express tokens for information interchange (eToken) and timely invokes seamless intercommunications between DATA and wiseCIO in comprehensive collaboration. One of the strategies applied to choices of eToken is sufficiency and without redundancy– sufficient eToken means good enough to fulfill semantic enrichment for aggregating information on wiseCIO, and non-redundancy minimal as much as possible to support online analytics over DATA with consistencies.

iTOP - instant typing online publishing via eToken is central to Uni-CARE that describes “what-to-do” but with “how-to-do” unspecified. Semantic enrichment highly and intelligently relies on algorithmic machine learning, which helps to make an ordinary end-user a *webmaster* capable of managing integral content, an *intelligent expert* able to aggregate useful information to deliver, and a *novel designer* creative for universal interfacing design. eToken is *context-neutral* when describing integral content, informative delivery and instant publishing before specific machine learning rules apply at runtime, which gives flexibility for Uni-CARE through elastic process automation.

e.g., there is a group of news to be announced, it can be described as follows:

```
#>   caption of news section :> values for the section
      ;] headline~1 :> values for the news
      ;] headline~2 :> values for the news
      ;] headline~3 :> values for the news
      ;] headline~4 :> values for the news
```

The above description in eToken is so different from “DNA-like” notations that only keyValue pairs are emphasized with flexible size of items to publish.

Where

;] starts the next item to proceed through a loop (flexible rows)

⇒ splits an item in a Key-Value pair, and “values” set a list with more or less applied to support a news report (flexible columns).

Under a specific context, a reasonable machine learning rule is situated at runtime to fulfill semantic enrichment for informative delivery, or integral content for online analytics. For instance, on a cell phone because of the narrow screen, the group of news would be announced in a bulleted list (V-layout), and on the contrary, the news group may be announced in multi-tab layout on a laptop.

Table 3. Contextual spontaneity in breadth for self-paced interest in browsing

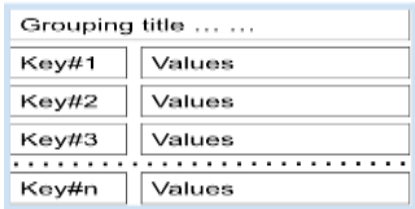

iTOP	eToken for algorithmic interactivity	Interfacing in UI Dictionary
	Grouping news ⇒ ...	
In-between mappings	: News~1 ⇒ news values :] News~2 ⇒ news values :] News~3 ⇒ news values :] News~4 ⇒ news values :] News~5 ⇒ news values	
V-layout (bulleted list)	AIM at multiTab layouts (actionable, interactive, and manipulatable)	

Table 3 shows the idea of context-neutral eToken, and its equivalence UI Dictionary in support of universal interface design without explicitly coding, but algorithmic machine learning is context-specific at runtime. Where iTOP embodies Uni-CARE in some ways to support: a) text-based eToken for content management in storage, online analytics, and machine learning driven automation as well, b) interactive editor in UI Dictionary without markups required so that everybody can perform UI design, c) bidirectional conversions in-between via friendly user interface, and e) presentable layouts are smart depending on the devices (bulleted list or multiTabs).

More importantly, text-based eToken also plays a key part in both seamless intercommunications and semantic enrichment among the CMD triad, as discussed afterward.

3.3 Intercommunications among CMD Triad

Collaborative archive repository takes good CARE of Anything orchestrated as a Service via algorithmic machine learning, which establishes seamless intercommunications among three parties so that interoperability via joint tasking is made automated, interactive, and responsive (AIR).

Instant publishing takes initial CARE that prepares integral content under managed over DATA and enables wiseCIO to promote informative delivery. Furthermore, wiseCIO propels interoperability over joint tasks via innovative online analytical processing (iOLAP) for better user experience through DATA interchange. As previously discussed, eToken is text-based and created as express tokens for information interchange to promote elastic process automation through seamless intercommunications between distributed parties of the CMD triad incorporating data transmission with joint tasking.

The strategic application of eToken to Uni-CARE is to suffice with AIM at actionability, interactivity and manipulability, minimize data storage without redundancy, and encrypt networking transmission via cryptography.

Text-based eToken for seamless intercommunications is somewhat similar to, but much more intelligent than JSON and/or XML [Microsoft Docs, 2021] – “DNA-like” ingredients are related to algorithmic machine

learning without explicitly coding required. Consequently, Uni-CARE utilizes text-based eToken to incorporate AIM for actionability, interactivity and manipulability to support *Anything* orchestrated as a Service, which will be thoroughly discussed in the next subsection.

3.4 Semantic Enrichment via Machine Learning

With three “i” goals in mind, Uni-CARE has been introduced as one of the CMD parties to advance *instant* publishing, *integral* content, and *informative* delivery as a whole to support interoperability by joint-tasking collaboration. In addition to seamless communications, algorithmic machine learning propels semantic enrichment for Anything as a Service. As mentioned before, JSON and/or XML would be in vain just as data formats without semantics empowered.

Semantic enrichment advances Anything as a Service with AIM at following characteristics:

- *Actionability* that embodies informative delivery on wiseCIO turns websites from “deafness” (no or less action) into dedication to servicing the end-users to use, webmasters to administer and/or web designers to create cloud-based content under managed over DATA.
- *Interactivity* that denotes the CMD triad as a whole promotes ubiquitous management via algorithmic interactivity for active collaboration, friendly incorporation and rapid assembly or integration of Anything as a Service.
- *Manipulability* that collaborates DATA with wiseCIO propels joint tasks via interoperability that composes smaller services into a larger service - interoperability actually comes out of seamless intercommunications.

Intelligent service or anything (orchestrated online) as a service representing what to pursue (via information technologies for iBEE), and how to perform (via operating technologies for human-computer interfacing) will be thoroughly discussed and examined in Section 4-5.

4. iBEE via Online Analytical Processing

Collaborative archive repository express promises to take CARE of integral content management (over DATA) and informative delivery (via wiseCIO) of intelligence for business, education and entertainment where innovative online analytics is used as a “fastlane” with CMD triad to support decision-making via machine learning patterns [Wolfewicz, A., 2022] [Misev, A., 2012], as illustrated in Figure 4.

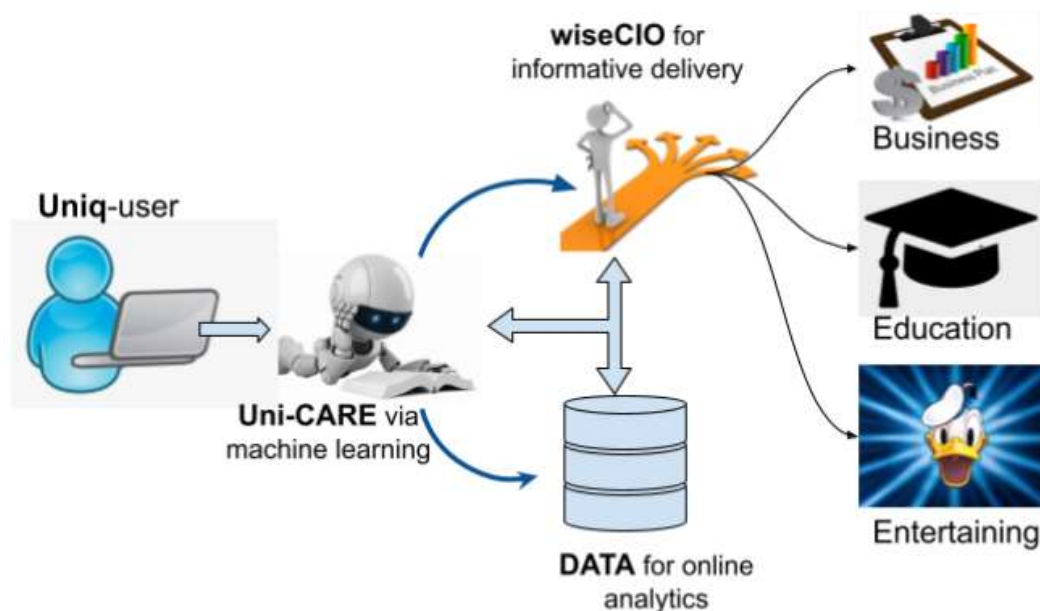


Figure 4. CMD triad serves the user with iBEE for decision-making

In general, Uni-CARE aims for an administrator on the archival repository via “DNA-like” notations for integral content management over DATA, and acts as an aggregator for intelligent delivery on wiseCIO in a “fastlane” approach. In particular, Universal interface takes CARE via machine learning as an activator to orchestrate Anything as a Service between DATA and wiseCIO as a whole for better user experience in aggregating intelligence for business, education and entertainment (iBEE).

4.1 Elastic Process Automation for Online Analytics

A web-based cloud intelligent service may involve very complex scenarios in order to support a large variety of specific situations. The elasticity of procedural automation represents a flexible and feasible process that is able to adjust and cover through specific scenarios within the mainstream in abstraction where machine learning plays a key part in recognizing the context under a specific situation. As part of machine learning, algorithmic processing fulfills online analytics that computationally examines information to discover useful patterns [Wolfewicz, A., 2022] [IBM Cloud Education, 2020] [Misev, A., 2012]. At this point, “DNA-like” eToken or express tokens for information interchange is a great helper to innovative online analytics.

A pattern with parameters implies a particular way of deriving a piece of algorithm to get some job done and some content assembled for a specific situation. Parameterization enables elasticity for procedural automation. Table 3 explicitly illustrates a good example of elastic process automation as follows:

```
@NEWS(headLin0 ,)... ..imgURL ,) videoID ,) summary ,) emBody
;) headLin1 ,)... ..imgURL ,) videoID ,) summary ,) emBody
;) headLin2 ,)... ..imgURL ,) videoID ,) summary ,) emBody
... ..
)@
```

Where:

~ @NEWS stands for a pattern providing a way in which intelligent news is presented.

~ Parameter videoID denotes some elasticity of particular ways to play multimedia as embedded parts. wiseCIO is smart to play such multimedia as video, audio, traditional website, and anything via a URL that a browser can open

~ More significance of elasticity is “trade-off” between the V-Layout and multiTab of grouping News via algorithmic interactivity according to the view resolution.

Algorithmic interactivity represents solutions with parameterized patterns to content management and delivery via machine learning. It is possible for algorithmic interactivity to vary for “One-Size-Fits-All” through elastic process automation.

4.2 Business Intelligence via Automated Processes

One of the significant objectives of intelligence via online analytics for business is to utilize business data to drive decision making. To implement this mission, reliable data must be IDEAL (integral, digestible, electronic, available and leveraging) to make decisions for business success trustworthily and dependably. In particular, innovative online analytical processing (iOLAP) requires that data be easy to understand (*digestible*) and compute (*electronic*) via computational thinking. wiseCIO taking particular Uni-CARE of intelligence for business embodies innovative online analytics through elastic process automation over DATA.

What does intelligence mean in general? Basically intelligence represents thinking ability, reasoning ability to understand and learn well in order to form judgments and opinions based on reason. Algorithmic machine learning for content management and delivery (CMD) focuses on “DNA-like” ingredients to fulfill Uni-CARE for intelligence in computational thinking through elastic process automation. “Business intelligence” may be a generalized term, and it could be specialized for instructional /educational (business) intelligence, or entertaining intelligence, all of which is assumed to support decision making.

According to the operational definition of computational thinking [DIMACS, NSF, 2020] [Liang, S., MacCarthy, E. & Hall, C., 2021], CMD triad embodies computational thinking throughout content management and delivery that has been fulfilled in a feasible, operational and optimal approach throughout algorithmic problem-solving processes (shown in Figure 5), such as: 1) by formatting problems the “DNA-like” notations enable a computer to help solve those problems, 2) by logically organizing and analyzing data, archival repository express establishes an analytical and transformational foundation over DATA, 3) by representing data through abstractions such as models and simulations, Uni-CARE is put for CMD in the “fastlane” through elastic process automation, 4) by identifying, analyzing, and implementing possible solutions, digital archiving and transformed analytics (DATA) for the goal of achieving the most efficient and effective combination of steps and resources, and 5) by generalizing and the problem-solving process, wiseCIO transfers the liaison with universal interface to a wide variety of problems.

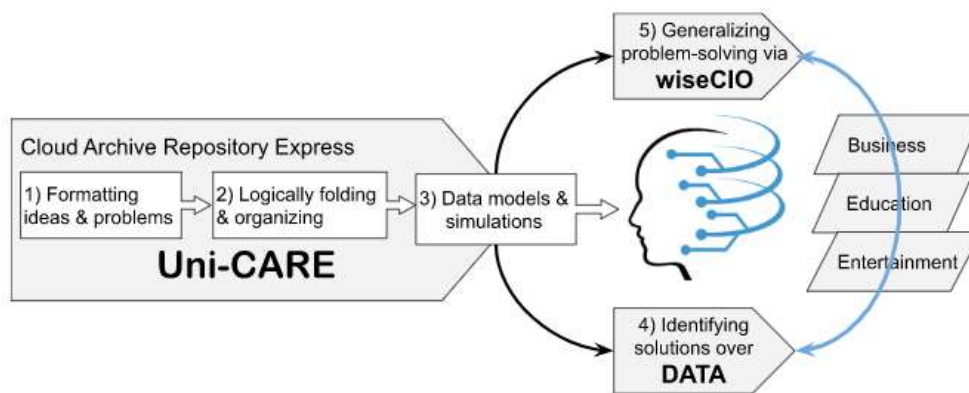


Figure 5. Computational thinking is feasible, operational and optimal via CMD triad

Figure 5 addresses computational thinking via CMD triad to be feasible via algorithmic interactivity to liaise with UNIQ professionals. It is also operational through elastic process automation and optimal for intelligence-driven decision making for Business, Education and Entertainment (iBEE). The highlight in terms of major contribution of CMD triad is applicable orchestration of Anything as a Service for decision-making, as detailed in Section 5.

4.3 Educational Excellence via Comprehensive Engagement in Learning

EXCEL- educational excellence via comprehensive engagement in learning is considerably a specialized “business” that helps to excel education for student success. In particular, when a courseware (designed for teaching purpose) is prepared and published as an online service, lots of things would be considered as intelligence to assist an instructor and/or students to make decisions on where, when and how to browse in-depth hierarchy, or glance in-breadth context, and in-detail access, all of which assists to target educational excellence.

Educational excellence is strongly associated with CIA-directed courseware presentation [Liang, S., MacCarthy, E. & Hall, C., 2021] of Contextuality, Interactivity and Accessibility: spontaneous contextuality in breadth, sequential interactivity in depth, and sustainable accessibility in detail, which decisively promotes instructional engagement for student success, illustrated by Figure 6.



Figure 6. CIA for educational excellence via contextuality, interactivity and accessibility

Figure 6 presents a CIA-directed courseware via a cloud-based intelligent service to promote educational excellence with engagement for student success. The courseware of CIA propels comprehensive engagement in a hybrid instructional approach throughout: a) contextuality in breadth to meet the spontaneous needs of

individuals to overview the content, b) interactivity in depth to dedicate students sequentially through learning process (one after another), and c) accessibility to incorporate sustainable advancement on teaching and learning engagement for learner success with individual coursework within profiles. Thorough discussions are made as follows:

- *Spontaneous contextuality* as the top-bar folder embodies multiple aspects that are organized beneath via a multiTab so that individuals feel spontaneous via the tab to look with a glance at what is about the course he/she is to study. The top-bar folder enables fold-out / fold-up for the convenience to browse. Also as discussed in 2.3 (Section 2 - informative delivery for better user experience), an individual's spontaneity can help overcome “monotony” in mind so that an individual would be interested to explore without any boredom.
- *Sequential interactivity* in left-aligning layouts presents major learning modules timely through which a course is taught sequentially. Those sequential learning modules are also able to serve the learner via “fold-out & fold-up” – collaboratively only one module is allowed in fold-out at a time, and the other in fold-out will automatically turn to “fold-up”.
- *Sustainable accessibility* is dynamically reflected with an intermediate media where all students have their own profile-boxes enabling individuals to instant prepare, present and publish (iPPP) their coursework according to the sequential learning paces. An instructor has the privilege to view, grade and interact hybridly with individuals over the submitted coursework for review & revision, and advancement (R2A-rising to grade A).

“CIA-directed” courseware “mirrors” educational intelligence to support hybrid teaching and learning for student success. It is via comprehensive engagement in learning that educational excellence in spontaneous contextuality (eliminating monotony), sequential interactivity (promoting request & responsiveness), and sustainable accessibility (between instructor and student).

4.4 Entertaining (Netflix-like) Reactivator

Entertaining reactivator basically acts like Netflix to offer a film and television series library through distribution deals as well as its own productions. Similarly, Uni-CARE for CMD triad is ultimately archiving all kinds of multimedia via algorithmic interactivity for content management and delivery. Contextuality in breadth enables self-paced preview for a heads-up on what a user wants, while hierarchy in depth may apply security levels to manage and control accessibility for commercial purposes. For instance, at a higher level, the multimedia is more general and cheaper, and at a lower level, the multimedia is more special for higher profit, etc.



Figure 7. netFlyer entertaining service for UnIX via contextuality and interactivity

Figure 7 illustrates an entertaining service as an example of well-categorized aspects, such as Multimedia Center (overview for free), Comedy, Tragedy, Disaster, Cartoon, and Musical. Initially, they are well archived for self-

paced preview for free if a user has not purchased anything yet. On the contrary, those categorizing banners automatically turn out to a hierarchical mode for a user to enjoy watching videos, playing games, and so on, which demonstrates individualization and orchestrates Anything as a Service under the category of entertaining service.

For each banner, there is a companion dropdown list that will collect content items at runtime as the user explores under the banner (container or folder) for re-visit as a dynamic menu list. User-centric experience can be best embodied while alternating different categories in a more friendly means without leaving the current context, which is user-friendly especially in the entertaining service that may have an “oceanic” number of multimedia for a user to explore and enjoy.

Collaborative archive repository express provides a fastlane with eToken to publish content onto DATA for wiseCIO to aggregate intelligence via online analytics for business, education and entertainment (iBEE). Innovative online analytics via machine learning has emerged as illustrated in Figure 4 in which machine learning plays a key role in elastic processes automation for business intelligence to support decision making.

5. Quinary XaaS Orchestration

QUINARY in general stands for quinary XaaS cases on the basis of instant publishing, integral management, and informative delivery over the CMD triad. In particular, QUINARY represents quinary (five) servicing templates that are applicable to orchestrating Anything as a Service via Uni-CARE of queryability, ubiquity, interactivity, novelty and availability.

Quinary services utilize similar (almost the same) algorithmic patterns [Misev, A., 2012] to drive machine learning automata for universal interface design and user-centric experience without explicitly coding required. This discloses great possibilities for (anything as) a service to be fulfilled by anyone who knows about how to type in the input blanks of UI Dictionary, illustrated in Figure 8.

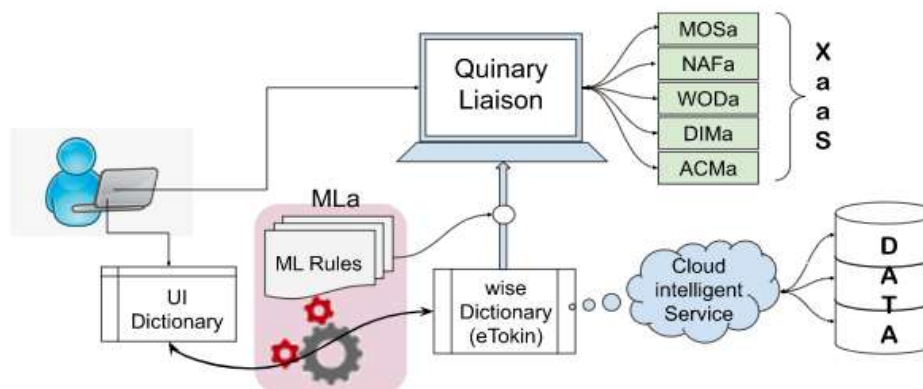


Figure 8. UI Dictionary takes Uni-CARE of web development for XaaS over DATA

Quinary liaison represents automated human-computer interfacing design via Machine Learning automata (MLa), in which the UI Dictionary simplifies web development by only inputting Key-Value pairs (dictionary) of nothing to do with HTML/CSS/JS, but “DNA-like” ingredients. The wise Dictionary (eToken), equivalent to UI Dictionary, denotes the bridging between DATA and wiseCIO that is assisted by algorithmic machine learning - MLa makes the wise Dictionary REAP- retrievable (from the remote server), executable (on the client device), analytical (elastic automation), and pass-along (with UI Dictionary for the user to input with ease).

Specific discussions will be conducted to take Uni-CARE for Anything as a Service as following:

- **Queryability:** word-driven aggregation (5.1)
- **Ubiquity:** digital music avocation in composition (5.2)
- **Interactivity:** montage-selected animation (5.3)
- **Novelty:** programmable assembled machinery (5.4)
- **Availability:** customizable name-featured activation (5.5)

Machine learning, according to [IBM Cloud Learn HUB, 2022], is a branch of artificial intelligence (AI) through computational thinking, which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy. In this article, thorough discussion will be conducted with heuristics that

are used to initiate machine learning through above characteristics, respectively.

5.1 Queryability: Word-Driven Aggregation

Word-driven aggregation performs queries to draw users' attention to similar or opposite wording descriptions. For instance, associating LOVE with a category of loving movies, a user drags the letter "L" lower than "E", which may lead to "LIKE" (less love) series of multimedia. On the contrary, the user can also drag the letter "L" higher than "E", which may get to the "AGAPE" (sacred love) series of multimedia. Inversely, if a user drags "LOVE" to the "EVOL", which may take him/her to the "HATE" (opposite) series. Strategically, word-driven aggregation encourages flexible queries [IGI Global Publisher of Timely Knowledge, 2022] that make human-computer interfacing user-friendlier by applying heuristic wording to facilitate the extraction of relevant data.

Queryability expresses something unsure while a user is browsing a new / complex website, therefore encourages the user to ask for more information specific in his/her mind. An initial wording guess acts as heuristics to help the user into a specific field to explore. Machine learning is nothing to do from scratch, but a means of solving problems by discovering things itself and learning from its own experience, in which heuristics, such as an initial wording guess, plays an initial part in proceeding with further exploration.

The word-driven showcase serves with a heuristic wording guess, then engages the user to go further and in more depth, which becomes especially effective while exploring entertaining multimedia within a giant number of resources.

In cloud-based applications, the word aggregated service encourages active exploration to discover things that are interesting to the user from his/her own experience for individual pleasure in contextual breadth and enjoyment in hierarchical depth, which becomes especially effective while exploring entertaining multimedia within a giant number of online resources.

5.2 Ubiquity: Digital Music Avocation in Composition

Digital music avocation plays a key part in fostering early-age musical education by recognizing music notes and music composition for fun, which is helpful for a little kid to discover his/her talent in composing music through coding and creativity. Vividly a kid does compositions of a "song" by selecting and putting musical notes into a queue and he/she can also make chords (playable at the same time) by putting two or more musical notes into the same position in the queue so as to play simultaneously. By purchasing a piano, it would be more pleasurable for a little kid to learn how to compose a song, but it is apparently too expensive before the parents can find out whether their beloved may have interest in music composition or not. A simple DIMa will do the trick on an iPad or a laptop. In general composability is a business principle that refers to the ability to combine modular business elements as needed [Radoff, J., 2022] [Digital Adoption Team, 2021].

Ubiquity in composing makes "piano" everywhere for musical composition that particularly embodies potential production or creation of music, poetry, or formal writing. Ubiquity via digital music composition aims to foster coding and creativity through computational and compositional activities. Heuristically, a kid can try some pre-prepared musical songs, and based on which he/she can also compose his/her own songs by adding chords (maybe weird or harmony) or replacing some key notes.

Practically a digital music showcase provides a web-based keyboard for musical tasting by composing songs, or making chords with super ease. The heuristic virtual keyboard helps a kid recognize musical notes, such C, D, A, B, so that he or she will be interested to compose personal music with a single and two more notes (chords) – the harmony of chords would be felt easily.

The digital music advocacy service embodies coding in practice, testing in performance, and revising in progress to inspire creativity through programmable music composition.

5.3 Interactivity: Montage-Selected Animation

Montage-selected animations promote human-computer interfacing via both manual and robotic operations. The former serves for the sake of testing to allow the active user to choose initially, while the latter to automate a process of multimedia in play within a few moments in which the user has no need to take any action unless he/she is willing to.

A selected montage provides a way to control an animation asset that enables a combination of several different animation sequences into a single asset that a user can break up into sections for playback [Unreal Developer Network, 2022]. The concept of animated montage is borrowed to express human-computer interfacing for operational interactivity.

Interactivity helps to involve users in the exchange of information between client devices (e.g., smartphone, tablet, laptop, and computers) and remote servers (or cloud-based Anything as a Service), and the degree to

which the exchange of information happens to control robots, robotic process automation, and so forth. Specifically, the enriched interactivity over a cloud-based intelligent service engages users with their exploration of entertaining services without boredom.

Traditionally, a given website on display is almost the same with header and footer items, then a user will have to scroll up/down to find a section of his/her interests in. A montage-selected app with heuristics and/or visual “montage” enables tab-based multi-sections to present a preview dynamically until the user hits the section to enter for better user experience.

In real applications a montage-selected showcase offers human-computer interfacing with heuristic scenarios that direct the user to preview primary categories of content, and he/she can choose which one to go while seeing the “montage” representing what his/her interests may really be in.

The montage animated service provides a presentable preview of scenarios through remote exchange of information to control digital robots via robotic process automation.

5.4 Novelty: Assembled Computing Machinery in Programming

Assembled computing machinery (ACM) in programming is to simulate coding, which utilizes an assembly-like language to create new apps in a visual approach. An instruction is encoded as an actional token consisting of at least three elements: a) a number (code), b) a wording description (action), and c) a visual illustration, such as an animated Gif, video, or audio. ACM allows users to create their own instruction set and from which they can program fun stories or scenarios in a sequential and/or selective approach. A program via ACM can be written by coding instructions executable with visual illustrations rendered dynamically, so the execution of programs produces a cartoonish movie that is runnably presentable, playable, programmable (rPPP).

Novelty in programming of data path processing is a universal feature in virtualized networks [Fang, J., Karl F. & Bähringer, K.F., 2011]. In particular, a series of instructions can be expressed through sequential (one step after another), and/or selective (out of two branches) order, which simulate programming in assembly-like languages for the sake of instructional teaching. Heuristically, a user can start with a pre-defined instruction set to program an algorithm that is visual (viewable), executable (sequential) and optional (selective). Furthermore, the user can enhance the existing instruction set, or create his own computing machinery with a new instruction set.

Theoretically an assembled computing showcase serves as a virtual computing machinery that supplies an instruction set for coding algorithms, encourages enhancement by adding new instructions into the set, and enables creativity with a new instruction set in support of problem solving of programmability.

The assembled computing service enables rapid prototyping and responsive assembly from the well-categorized multimedia to help users explore various scenarios for kids, adults, and so on.

5.5 Availability: Name-Featured Activation in Customizing

Name-featured activation prioritizes available customization to encourage users to explore entertaining multimedia, such as audios or videos without boredom. The initial start is initiated by the user to input his/her name, and the combined name in ASCII generates a key to trigger a group of multimedia for preview until one media is chosen.

Customizable Availability represents some adjustment to make responsively to accommodate a user’s particular needs so that better user experience can be provided to encourage and engage the user with something new via cloud-based Anything as a Service. Generally, most websites, starting with a search, offer a group of content with header and footer items for further explorations in breadth. However, a new-hand user may have no clue about what to search and where to start. As initial heuristics, letters of a given name in ASCII are combined to bring out the customizable content for the user to get started with great ease.

Psychologically a name-featured showcase provides a customizable preview on the primary category of grouping content. According to Psychology Today - Hello, My Name is Unique [Psychology Today, 2016], “Some parents want names for their children that are unique but not too trendy. Other parents seem to love alternative spellings. How important is a name to our self-perception?” A unique and special name will heuristically lead to pleasant experience while a user exploring entertainment through multimedia.

The name activated service aims for responsive adjustment over multimedia grouping to accommodate a customer's particular needs for better user experience that encourages engagement without boredom [Psychology Today, 2016].

6. Conclusion

Uni-CARE or Universal Interface has emerged from Cloud Archive Repository Express that collaborates integral

content management over DATA with informative delivery via wiseCIO through algorithmic machine learning. Conceptualized as a “fastlane” into the CMD triad, Uni-CARE provides mathematical and computational solutions to achieve following UNIQ objectives:

Ubiquitous Manager is everywhere across the CMD triad to harness comprehensive information for business, education and entertainment (iBEE), and to propel composite assembly of anything as a service (XaaS). The managed “ubiquity” has resolved “*controversial*” agendas among IT personnel [Line25 for web design ideas, 2009] so as to make an ordinary end-user a webmaster, a web designer and/or an extraordinary user while browsing via “In-&-Out” interactivity without often page swapping, and exploring via self-paced spontaneity without overwhelming [Miller, G.A., 1956], as discussed in Section 2.

Novel Designer takes CARE for universal interface design and user-centric experience by instant typing online publishing (iTOP) via express tokens for information interchange (eToken) that are greatly different from, and more advanced than traditional XML and JSON [Microsoft Docs, 2021], in which iTOP, assisted by algorithmic machine learning, presents universal interface design with aims at user-centric experience without explicitly coding required, as deeply studied in Section 3.

Intelligent Expert represents one of the CMD goals to aggregate intelligence for business, education and entertainment in support of decision-making. The CMD triad is collaborated with integral content over DATA and informative delivery on wiseCIO. Where digital archiving ensures integral content managed by DATA, and intelligent service serves informative delivery by wiseCIO throughout elastic process automation with algorithmic machine learning [IBM Cloud Learn HUB, 2022], as presented in Section 4.

Quinary Liaison facilitates human-computer interfacing via eToken to simplify collaborative communications without rendering related redundancies, but semantic enrichment that suffice to orchestrate Anything as a Service with machine learning patterns through elastic process automation [Misev, A., 2012], as discussed as Quinary XaaS in Section 5.

Visible accomplishments

Apparently following critical aspects have paved successful roadmaps toward the above accomplishments:

Novel triad provides innovative solutions to cloud-based distributed problems for Anything to be orchestrated as a Service to incorporate instant typing online publishing via Uni-CARE, integral content management over DATA, and informative content delivery on wiseCIO.

Challenges (versus chances) turn out from *controversial agendas* into *cohesive advancements* that propel large teams united and working together effectively. Algorithmically CMD triad, with practical methods implemented as intelligent services, empowers users to be cohesive professionals: like a webmaster over DATA, an interface designer via Uni-CARE, and an intelligent expert on wiseCIO to discover useful and usable information to support decision-making for business, education and entertainment (iBEE).

eToken (express tokens for information interchange) has been introduced to enable seamless intercommunications among CMD triad for interoperability over cloud-based distributed applications, and semantic enrichments for comprehensive advancement of information and operating technologies (IOT) [Tripathi, S., Luellwitz, L. & Egge, K., 2020] through algorithmic machine learning.

Future Work & Practice

In addition to feasible accomplishments, there will be more efforts to make as future work in practice as follows:

- a) machine learning rules should be more active to prompt test-driven “sensors” to enable thorough analysis on eToken for the sake of comprehensively semantic enrichment, instead of confused execution because of highly-express tokens (too brief?) for information interchange.
- b) more sophisticated templates for domain-specific services will be developed practically and tested thoroughly with a full set of sampling data provided for deep learning on simple imports, execution and testing for customization and development.
- c) more thorough work will be conducted on algorithmic sophistication to enhance computing abilities to machine learning to minimize explicitly coding through robotic process automation.
- d) more practical applications will be discovered to reflect Anything as a Service and put into practice with a strengthened “brain” in machine learning – through practice, we can gradually collect ourselves and learn how to be more fully with what we do.

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References

- Digital Adoption Team. (2021). *Composability: A Game-Changing New Paradigm for the Business World*. Retrieved from <https://www.digital-adoption.com/composability/>
- DIMACS, NSF (2020). *An Operational Definition - What Is Computational Thinking?* Rutgers, theState University of New Jersey. Retrieved from <https://ctpdonline.org/computational-thinking/>
- Fang, J., Karl F., & Bähringer, K. F. (2011). *Assembly Programmability for Architecture of Network Systems*. Retrieved from <https://www.sciencedirect.com/topics/engineering/programmability>
- Heshmat, S. (2012). *Eight Reasons Why We Get Bored*. *Psychology Today*. Retrieved from <https://www.psychologytoday.com/us/blog/science-choice/201706/eight-reasons-why-we-get-bored>
- IBM Cloud Education (2020). *What is OLAP - Cloud Architecture*. Retrieved from <https://www.ibm.com/cloud/learn/olap#toc-what-is-ol-cEW94rVb>
- IBM Cloud Learn HUB (2022). *What is machine learning?* Retrieved from <https://www.ibm.com/cloud/learn/machine-learning>
- IGI Global Publisher of Timely Knowledge (2022). *What is Flexible Querying*. Retrieved from <https://www.igi-global.com/dictionary/flexible-querying-techniques-based-cbr/11253>
- Jamest, J., Rajendra, V., & Zhang, Y. (2012) *Content Management and Delivery, Assignee: Microsoft Corp*. Retrieved from <https://pubchem.ncbi.nlm.nih.gov/patent/CN-104854842-A>
- Liang, S., Leby, K., & McCarthy, P. (2020). wiseCIO: Web-Based Intelligent Services Engaging Cloud Intelligence Outlet. *SAI 2020: Intelligent Computing*, 1, 169-195. https://doi.org/10.1007/978-3-030-52249-0_12
- Liang, S., MacCarthy, E. & Hall, C. (2021) *Advanced Integral Digitalization to Digital Archiving and Transformed Analytics, SGCI Gateways*. Retrieved from <https://www.youtube.com/watch?v=YtqVBr-vi38>
- Liang, S., Mak, L., Keele, E., & McCarthy, P. (2021). iDATA-Orchestrated wiseCIO for Anything-as-a-Service. *FICC 2021: Advances in Information and Communication*, 1363, 401-424, Springer. https://doi.org/10.1007/978-3-030-73100-7_29
- Liang, S., McCarthy, P. & Van Stry, M. (2021). DATA: Digital Archiving and Transformed Analytics. *Intelligent Information Management (IIM)*, 13, 70-95. <https://doi.org/10.4236/iim.2021.131004>
- Line25 for web design ideas and inspiration. (since 2009). *Top 5 Web Design Debates That Cause the Most Riots*. Retrieved from <https://line25.com/articles/top-5-web-design-debates-that-cause-the-most-riots/>
- Microsoft Docs. (2021). Windows Communication Foundations (WCF). *Mapping Between JSON and XML*. Retrieved from <https://docs.microsoft.com/en-us/dotnet/framework/wcf/feature-details/mapping-between-json-and-xml>
- Miller, G. A. (1956). *The Magical Number Seven, Plus or Minus TWO: Some Limits on Our Capacity for Processing Information*, *The Psychological Review*. <https://doi.org/10.1037/h0043158>
- Misev, A. (2012). *Algorithmic patterns - Data structures and algorithms in Java*. Retrieved from <https://perun.pmf.uns.ac.rs/java/workshops/Algorithmic-patterns.pdf>
- National Library of Medicine. Cells and DNA - What is DNA? 2021. Retrieved from <https://medlineplus.gov/genetics/understanding/basics/dna/>

- Psychology Today (2016). *Hello, My Name is Unique*. Retrieved from <https://www.psychologytoday.com/us/articles/200403/hello-my-name-is-unique>
- Radoff, J. (2022). *Composability is the Most Powerful Creative Force in the Universe*. Retrieved from <https://medium.com/building-the-metaverse/composability-is-the-most-powerful-creative-force-in-the-universe-e82e3dd83ccd>
- SailPoint. (2020). *Robotic Process Automation (RPA) Technology*. Retrieved from https://www.sailpoint.com/identity-library/robotic-process-automation-rpa-technology/?utm_id=414626189
- Tripathi, S., Luellwitz, L., & Egge, K. (2020). Use Information Technologies and Operating Technologies to get the most from your enterprise asset management system. Retrieved from <https://www.ibm.com/blogs/internet-of-things/use-information-technologies-and-operating-technologies-to-get-the-most-from-your-enterprise-asset-management-system/>
- Unreal Developer Network (2022). *Animation Montage Overview*. Retrieved from <https://docs.unrealengine.com/4.26/en-US/AnimatingObjects/SkeletalMeshAnimation/AnimMontage/Overview/>
- Wolfewicz, A. (2022). *Deep Learning vs. Machine Learning – What's The Difference?* Retrieved from <https://levity.ai/blog/difference-machine-learning-deep-learning>

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