EHRLICH GROUP
TURNING IDEAS INTO VALUE

What makes a good computer related patent application?

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IPTRADE
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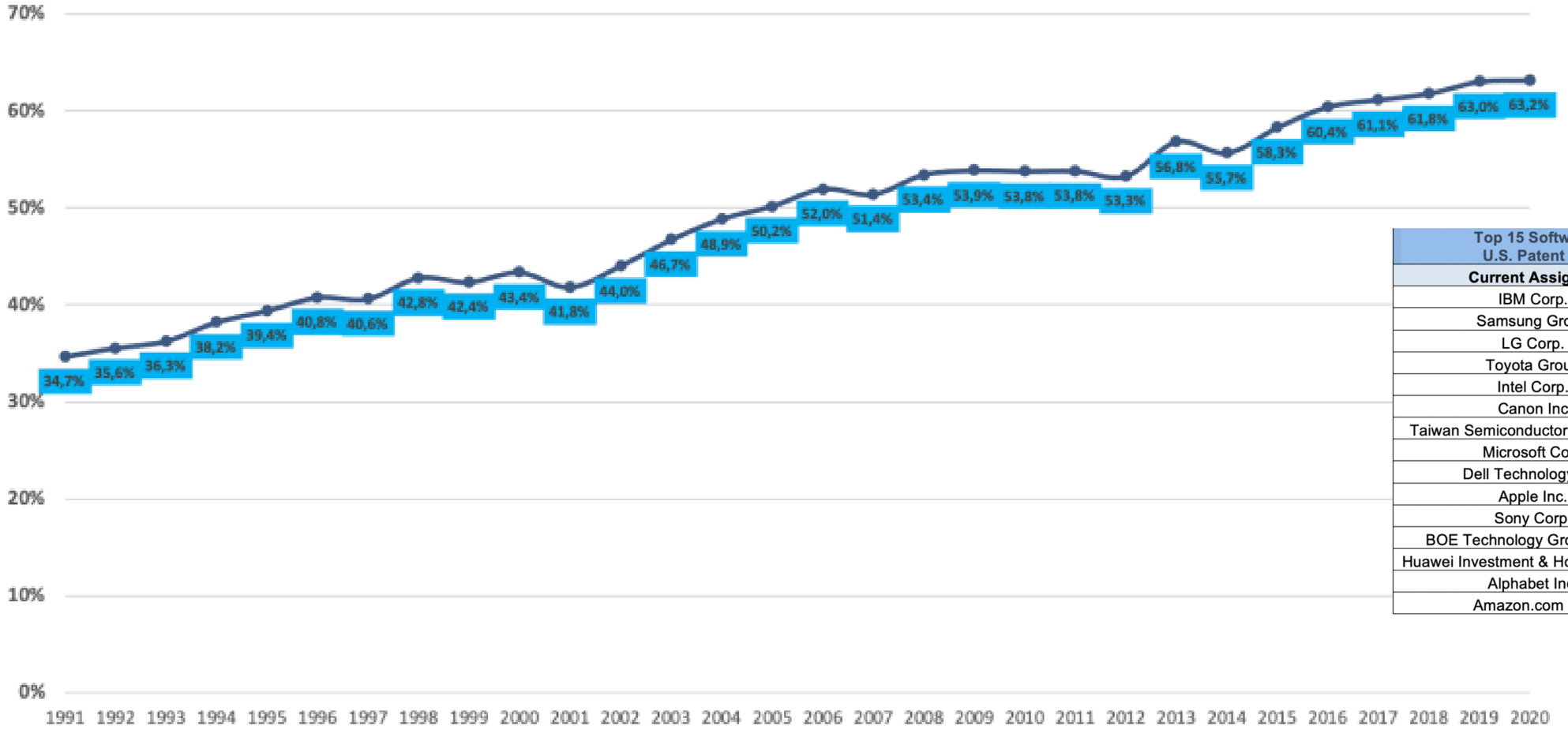
% Share of Software-Related U.S. Granted Patents



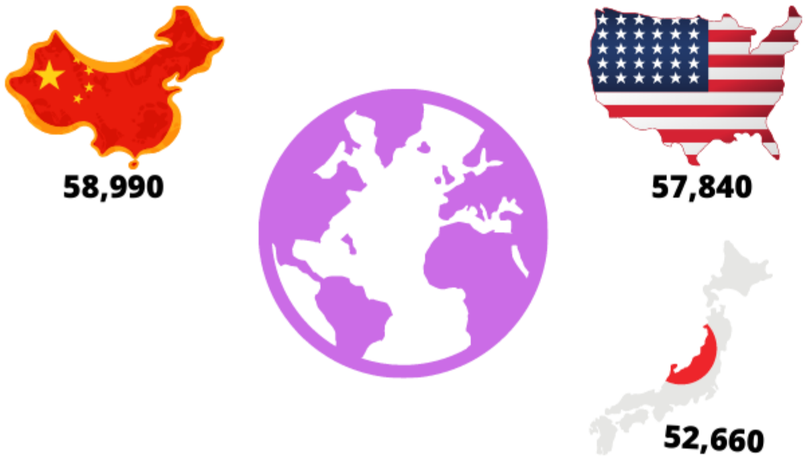
Top 15 Software-Related Granted U.S. Patent Assignees for 2020	
Current Assignee	**Count**
IBM Corp.	7891
Samsung Group	7559
LG Corp.	3332
Toyota Group	3189
Intel Corp.	2765
Canon Inc	2590
Taiwan Semiconductor Mfg. Co. Ltd	2579
Microsoft Corp	2555
Dell Technology Inc.	2497
Apple Inc.	2324
Sony Corp.	2291
BOE Technology Group Co Ltd	2000
Huawei Investment & Holding Co. Ltd.	1974
Alphabet Inc.	1921
Amazon.com Inc.	1821

Who Filed the most PCT patent applications in 2019?

5.2%

Total applications 256,800

Top countries

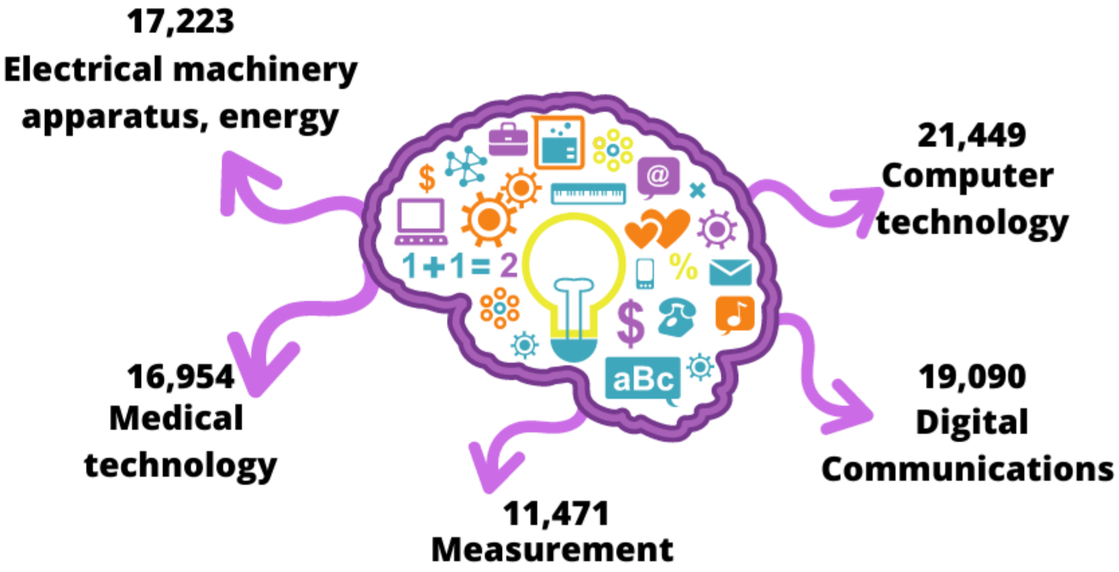


58,990

57,840

52,660

Top 5 fields of technology

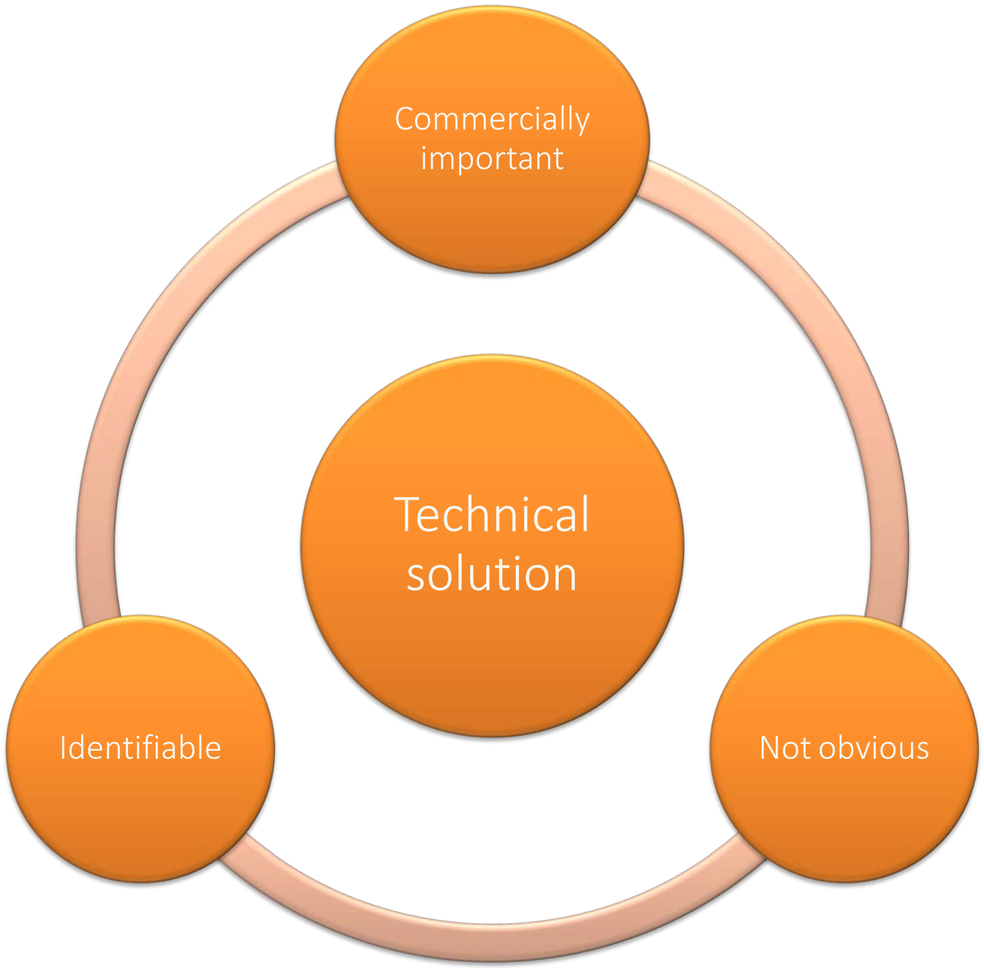


Top 10 PCT applicants

Number of published PCT applications

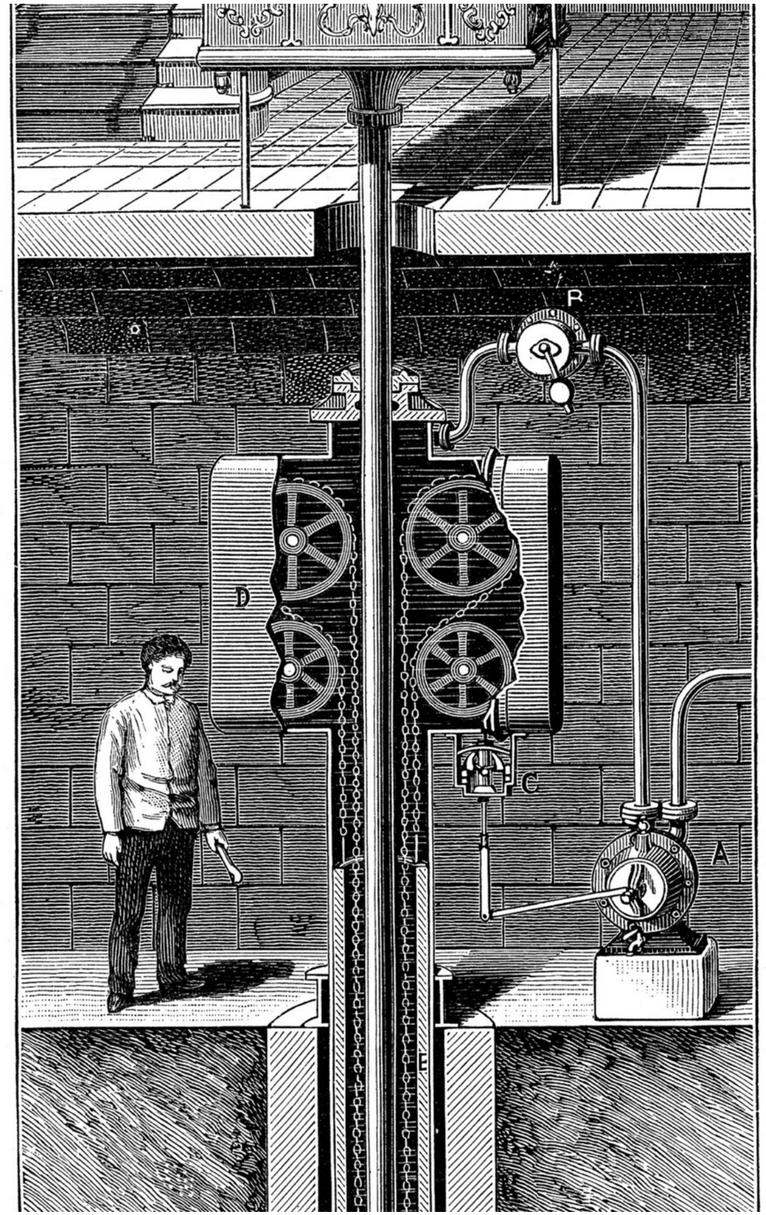
4,411	2,661	2,334	2,127	1,927	1,864	1,698	1,691	1,687	1,646
Huawei Technologies	Mitsubishi Electric	Samsung Electronics	Qualcomm	Guang Dong	BOE Technology	LM Ericsson	Ping an Technology	Robert Bosch	LG Electronic

WHAT MAKES A GOOD SOFTWARE PATENT APPLICATION?



35 U.S. Code § 101 - Inventions patentable

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.



What is patentable?

- Does the claims recites an abstract idea.
- Look for unique features after you remove from the claim the abstract idea and commonly used computing elements.

Three un-patentable buckets

1 **Mathematical Concepts**
Mathematical relationships,
Mathematical formulas or equations,
Mathematical calculations.

2 **Methods of organizing human activity**
Fundamental economic principles or practices
Commercial or legal interactions; and
Managing personal behaviour or relationships or interactions between people.

3 **Mental Processes**
Concepts performed in the human mind (including an observation, evaluation, judgment, opinion).

Get off on the right foot

- Clear identification of problem faced by prior art
- Clear identification of benefits of the claimed solution or improvement over the prior art
- Strong identification of technology
- Practical application of the solution or improvement to produce the benefit, not mere claimed recitation of the idea
- Technical solution to a technical problem (using a combination of conventional elements)

Examples

- Unique data on known trained model
- Training process
- Unique learning/inference scheme
- UX that improves the speed accuracy and usability of a dynamic action
- Effect of change of data on GUI/objects
- Storage/Latency/Computational improvement

- Report generation
- Rule based scheme
- People queues/tasks/fact based recommendations
- Advertisement schemes

How to overcome rejection I

1. **No "High Level of Abstraction“**.

2. **Claim's Character is a must**:
   The claim as a whole
   Search the specification
   Identify the focus of the claimed advancement

How to overcome rejection II

3. This is not novelty/non obviousness examination.

4. Claims must be "directed to," and not just "be based on," the ineligible concept.

How to redraft I

1. *Define the "character of the claim" using proper test*

1. (Currently Amended) A computerized method of online content verification, comprising:

using at least one processor of a verification server for:

receiving, over a network, a first data from a host monitoring code embedded in a webpage or an application loaded from a content server and executed by a client device, the host monitoring code ~~which is~~ executed by the client device during an execution session of the webpage or the application is configured to collect the first data which is indicative of the execution session in the context of the webpage or the application, the webpage or the application embeds at least one nesting element used for loading nested content from at least one nested content server;

receiving, over the network, a second data from a guest monitoring code embedded in the nested content loaded by the client device during the execution, the guest monitoring code ~~which is~~ executed by the client device during an execution of the nested content is configured to collect the second data which is indicative of the execution session in the context of the nested content;

analyzing an aggregated session data aggregating the first data and the second data to identify ~~provide a comprehensive view of~~ the execution session in the context of both the webpage or the application and the nested content;

verifying automatically, based on the analysis, compliance of the execution session with respcet to the nested content according to at least one serving rule associated with the nested content; and

transmitting, via the network, a notification to the at least one nested content server, the notification is indicative of an outcome of the compliance verification;

wherein the first data is not available to the guest monitoring code and the second data is not available to the host monitoring code;

wherein the host monitoring code and the guest monitoring code are independent of each other such that the host monitoring code transmits the first data to the verification server in a first communication session and the guest monitoring code transmits the second data to the verification server in a second communication session independent of the first communication session.

How to redraft I

2. Use analogies to actual cases/examples

For example: **Example 45**

In the Claims:

1. (Currently Amended) A computer-implemented method of adjusting enteral feeding of a patient by an enteral feeding controller, comprising:

receiving output of a carbon dioxide sensor that senses at least one of inspiration and expiration of the patient;

receiving output of a flow sensor that senses at least one of inspiration and expiration of the patient;

computing energy expenditure of the patient based on the output of the carbon dioxide sensor and the flow sensor;

computing a target nutritional goal for the enteral feeding that provides 100% or near 100% of the computed energy expenditure of the patient irrespective of a predictive equation;

selecting a target feeding formula from a plurality of feeding formulas according to the target nutritional goal; ~~and~~

generating instructions for adjustment, by an enteral feeding controller, for delivery of the target feeding formula; and

providing the generated instructions to the enteral feeding controller to deliver enteral feedings to the patient via an enteral feeding tube from at least one feed inlet of at least one feeding tube according to at least one of a feeding rate and a feeding composition defined by the generated instructions.

How to redraft II

3. *Make the Claim not using computers "merely as a tool“*

1. (Currently Amended) A method of automatically cross-referencing problem information between users, comprising:

using a plurality of code add-ons~~client modules~~ connected to respective integrated development environments (IDEs) executed on at least some of a plurality of client terminals that are connected with a server over a network, for:

monitoring a plurality of log files each generated in runtime by an execution of one of a plurality of software programs which is executed with one of the plurality of code add-ons connected to one of the plurality of IDEs ~~client modules~~ on one of ~~a~~ the plurality of client terminals;

analyzing the plurality of log files to identify a plurality of problems by identifying a plurality of regular expressions associated with the plurality of problems in the plurality of log files, the plurality of regular expressions are stored in a plurality of problem entries on the server, each containing problem information of at least one of said plurality of problems, wherein at least one of said plurality of problems of the plurality of problem entries stored on the server is associated with a status indicative of unsolved;

analyzing commits to a code repository of the plurality of software programs to identify a solution to at least one of said plurality of problems of the plurality of problem entries stored on the server associated with the status indicative of unsolved;

providing the solution to the server for updating the respective problem entry of the at least one of said plurality of problems associated with the status indicative of unsolved to a status indicative of solved, and storing the solution to the problem in the respective problem entry;

in response to an identification of each of the plurality of problems:

presenting an indication of problem information on a respective client terminal from the plurality of client terminals to assist in eliminating said respective ~~coding~~ problem,

for each respective problem of the plurality of problems associated with a status indicative of unsolved: monitoring the respective problem entry associated with the at least one of the plurality of problems with a status indicative of unsolved for a change in the status to a status indicative of solved, and in response to the change presenting the solution to the problem stored in the respective entry on the respective client terminal.

How to redraft II

3. Recite a particular solution as oppose to claiming an outcome

1. (Currently Amended) A method for increasing security of access to restricted resources by authentication based on image location and image analysis, comprising:

identifying a request of a user to access a resource;

determining a location and view point of a mobile client device;

selecting from a pre-stored plurality of three-dimensional models, based on said location and said view point, at least one three-dimensional model defining a geometric map of locations and poses of a plurality of physical objects located ~~, geometrically mapping a plurality of objects~~ in an environment around said location as viewed from said location and view point;

capturing at least one first image at said location by a camera of said mobile client device;

presenting said at least one first image on a display of said mobile client device;

identifying a plurality of user selections of a set of objects depicted in said at least one first image ~~a set of objects corresponding to a plurality of user selections made by said user with reference to said at least one first image~~, when said at least one first image is presented on said display;

performing a match between visual characteristics of each of said user selected set of objects and visual characteristics of each of a predefined set of objects from said plurality of physical objects defined in said at least one three-dimensional model, using said at least one three-dimensional model and said view point; ~~and~~

authenticating said request based on an outcome of said match; and

upon positive authentication of said request, authorizing said user to access said resource.

How to redraft II

5. Claim elements are not well-understood, routine, and conventional

Argue that additional claim elements are unconventional:.

This is not a Section 103 analysis.

Ordered Combination matters.

In the Claims:

1. (Currently Amended) A computerized method for processing a purchase order comprising:

Receiving, at a server, a purchase order from a customer node communicatively connected to said server, wherein the purchase order includes information regarding a customer associated with the customer node, a supplier of goods, at least one item to be purchased, a cost of the purchase order and a preferable loan term;

extracting a threshold value respective of information included in said purchase order, from a predefined mapping table stored in a database and mapping a plurality of costs and a plurality of loan terms to a plurality of threshold values;

capturing, by at least one sensor installed in said customer node, a plurality of activities of said customer;

collecting, by said server, metadata comprised of a plurality of data elements related to the customer associated with the customer node, wherein said metadata is collected at least by tracking~~, capturing~~ and analyzing ~~a~~ said captured plurality of activities ~~of said customer captured by at least one sensor installed in said customer node~~;

analyzing, by said server, the purchase order and the collected metadata to compute a credit standing for the customer, based on weighted calculation of a plurality of virtual values assigned to each of said plurality of data elements and to information included in said purchase order according to a plurality of predefined rules;

determining, by said server, whether the credit standing crosses said threshold value;

requesting from a supplier node communicatively connected to said server an electronic authentication respective of the purchase order, when the credit standing crosses the predetermined threshold; and

sending, by said server, an electronic guarantee to finance the purchase order to the supplier node, upon reception of the electronic authentication.

How to redraft I

6. Do not merely gather, analyze, and output data

Focus on practical applications

In the Claims:

1. (Currently Amended) A computing device for cybersecurity of a distributed smart contract executing on a blockchain, comprising:

at least one hardware processor of a network connected server executing a code of the distributed smart contract of a distributed ledger dataset, the code for:

managing a primary reserve of a plurality of primary tokens of a primary cryptocurrency and a secondary reserve of a plurality of secondary tokens of a secondary cryptocurrency;

receiving a transaction request for the primary token;

establishing communication with at least one server executing a code implementation of a price oracle configured to provide in real time an external price of the primary token, and accessing ~~a~~ the price oracle to obtain ~~an~~ the external price of the primary token;

computing an updated total value of the primary reserve according to the external price provide by the price oracle;

in response to the updated total value of primary reserve computed based on the price oracle being unequal to an initial staked value of the primary reserve, adjust a primary dynamic reserve weight and adjust a secondary dynamic reserve weight, wherein a total value computed by a function of the primary reserve after being increased or decreased by a target amount of primary tokens and using the adjusted primary and secondary dynamic reserve weights, is equal to the initial staked value of the primary reserve, and the total value of the primary reserve is maintained at a predefined ratio to a total value of the secondary reserve; and

executing the transaction request.

What worked for us lately?

- *Improvement ! Improvement ! Improvement !*
- Examples:
  - Image processing (e.g. blue noise mask, object detection)
  - GPS data analysis (e.g. location based filters)
  - Computational architecture (e.g. webpage layout management)
  - New UX (e.g. auto rule generation)
  - Cyber, storage management.
  - Data distribution/monitoring (e.g. event invitation distribution, schedule update)
  - Computational improvement
  - Graphical data processing

REACH OUT

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