

# Exploring the flip side of Explainable AI:

Unexplained expert systems and  
cultural acceptance for the  
unexplained



GEORGIA  
SOUTHERN  
UNIVERSITY

Wilhelmina Randtke, Head of Libraries Technologies and Systems, Georgia Southern University Libraries  
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# Abstract

Current buzz about artificial intelligence tends to present the excitement as coming from technological advances like speed to allow a real time conversation and better quality responses from chatbots and generative artificial intelligence. This talk explores how cultural expectations, rather than technology, may be what recently reached a tipping point to put artificial intelligence into the public spotlight. From a non-technological perspective, explainability is a major difference between machine learning and traditional software which encoded and applied logical rules. Popular acceptance and embrace of machine learning requires a comfort level with not having an explanation for why the software does what it does. This talk explores how past developments in how we interact with traditional software accustomed the general public to not getting an explanation, even for very explainable software. Technology tools like skip logic in forms prevent us seeing the big picture within a logical system. Cloud computing primed us to expect updates over time and accept constant changes outside our control to tools that we use daily. When even imminently explainable software is not explained, explainability no longer matters. This opens the way for the public to embrace machine learning.

# The changing meaning of “artificial intelligence”

## First Wave



### Expert knowledge or criteria and logical reasoning

The first wave of AI is represented by expert knowledge or criteria developed in law or other authoritative sources and encoded into a computer program in the form of an expert system.

**Example:** Online tax preparation

## Second Wave



### Machine/Statistical learning

Second-wave AI technology is based on machine learning, or statistical learning, and includes voice recognition, natural-language processing, and computer-vision technologies, among others.

**Example:** Face-recognition technology

## Third Wave



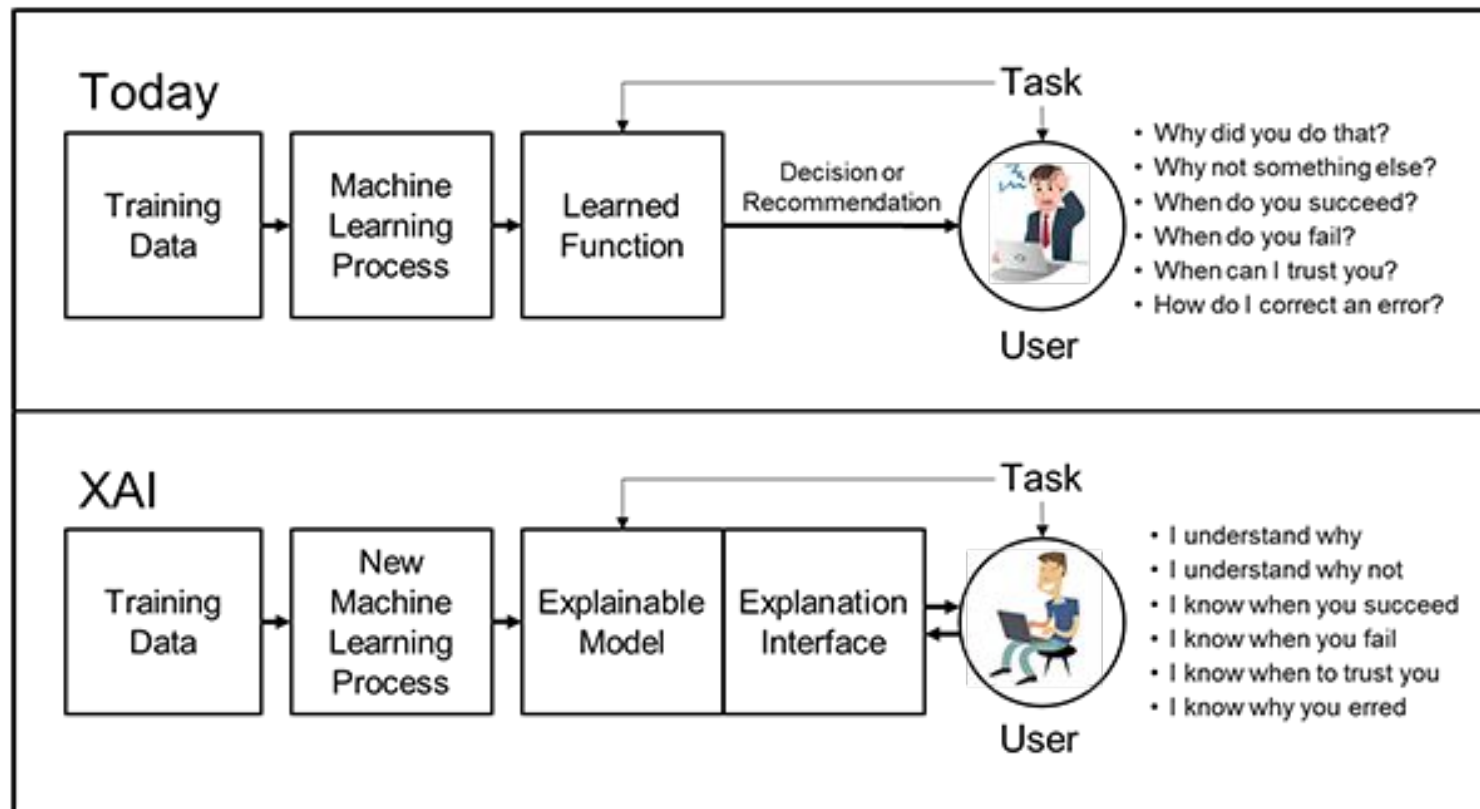
### Contextual adaptation

Third-wave AI technology combines the strengths of first- and second-wave AI, and is also capable of contextual sophistication, abstraction, and explanation.

**Example:** Autonomous ships

# Explainable AI

# Regulation is coming



# Regulation is coming

European Union's General Data Protection Regulation, Recital 71, enacted 2016:

- Right to an explanation
- “The data subject should have the right not to be **subject to a decision**, which may include a measure, evaluating personal aspects relating to him or her **which is based solely on automated processing** and which produces legal effects concerning him or her or similarly significantly affects him or her [. . .] In any case, such processing should be subject to suitable safeguards, which should include specific information to the data subject and **the right** to obtain human intervention, to express his or her point of view, **to obtain an explanation of the decision reached** after such assessment and to challenge the decision.” (emphasis added)

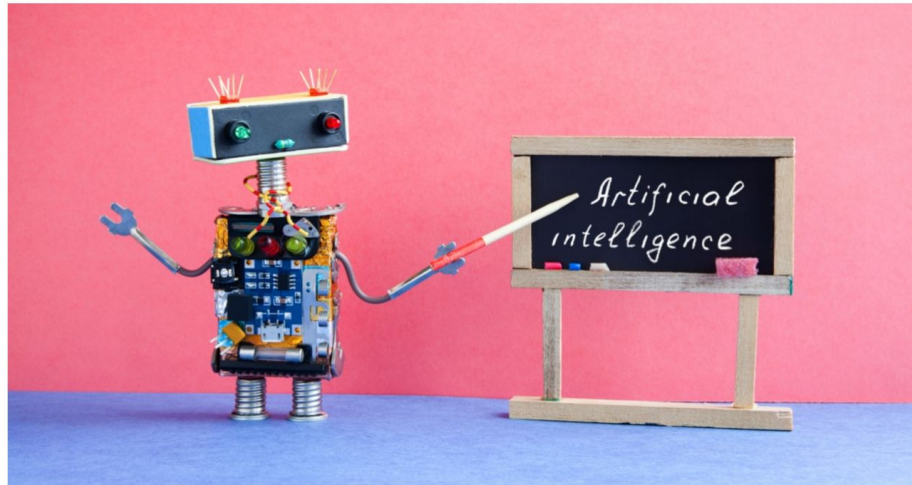
# Avoiding regulation... ... self regulating



## What Is Explainable AI?

Home AI Data Center Driving Gaming Pro Graphics Robotics Healthcare Startups AI Podcast NVIDIA Life

May 24, 2021 by John Ashley



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Explainable AI Contact Us Start free

Introducing Example-based Explanations, a first-of-its-kind service to help users improve model performance by refining their data. [Learn more.](#)

## Explainable AI

Tools and frameworks to understand and interpret your machine learning models.

Try it free

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## Understand AI output and build trust

Explainable AI is a set of tools and frameworks to help you understand and interpret predictions made by your machine learning models, natively integrated with a number of Google's products and services. With it, you can debug

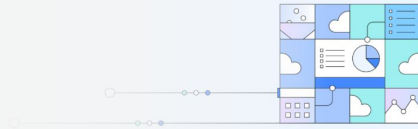


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## What is explainable AI?



Explore IBM's explainable AI solution

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What is explainable AI?

Why explainable AI matters

How explainable AI works

Continuous model evaluation

Benefits

Five considerations

## What is explainable AI?

Explainable artificial intelligence (XAI) is a set of processes and methods that allows human users to comprehend and trust the results and output created by machine learning algorithms.

White paper

Why AI governance is a business imperative for scaling enterprise AI



# Explainable AI

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Machine Learning...

...not so new

# Machine Learning toolkits: Dates of public release

- WEKA:
  - (Waikato Environment for Knowledge Analysis)
  - established circa 1997
- MALLET
  - (Machine Learning for Language Toolkit)
  - established circa 2002
- OpenNLP
  - established circa 2004
- GATE:
  - (General Architecture for Text Engineering)
  - established circa 1995
- RapidMiner
  - (formerly called Yet Another Learning Environment)
  - released for sale 2001
- SPSS Modeler
  - (formerly called Clementine)
  - released for sale 1994
- SAS
  - released for sale 1972
- InfiniteInsight
  - (formerly KXEN)
  - released circa 1998
- KNIME
  - released for sale 2006
- ... and many more

What is really new?

Culture and attitudes?

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## Who Qualifies as Your Dependent

### Dependents, Qualifying Child for Child Tax Credit, and Credit for Other Dependents

Follow the steps below to find out if a person qualifies as your dependent and to find out if your dependent qualifies you to take the child tax credit or the credit for other dependents. If you have more than four dependents, check the box under *Dependents* on page 1 of Form 1040 or 1040-SR and include a statement showing the information required in columns (1) through (4).

**TIP** *The dependents you claim are those you list by name and SSN in the Dependents section on Form 1040 or 1040-SR.*

**Before you begin.** See the definition of *Social security number*, later. If you want to claim the child tax credit or the credit for other dependents, you (and your spouse if filing jointly) must have an SSN or ITIN issued on or before the due date of your 2022 return (including extensions). If an ITIN is applied for on or before the due date of a 2022 return (including extensions) and the IRS issues an ITIN as result of the application, the IRS will consider the ITIN as issued on or before the due date of the return.

### Step 1 Do You Have a Qualifying Child?

A qualifying child is a child who is your...

Son, daughter, stepchild, foster child, brother, sister, stepbrother, stepsister, half brother, half sister, or a descendant of any of them (for example, your grandchild, niece, or nephew)

AND

was ...

Under age 19 at the end of 2022 and younger than you (or your spouse if filing jointly)

or

Under age 24 at the end of 2022, a student (defined later), and younger than you (or your spouse if filing jointly)

or

Any age and permanently and totally disabled (defined later)

AND

Who didn't provide over half of their own support for 2022 (see Pub. 501)

AND

Who isn't filing a joint return for 2022 or is filing a joint return for 2022 only to claim a refund of withheld income tax or estimated tax paid (see Pub. 501 for details and examples)

AND

the definition of a U.S. national or U.S. resident alien. If the child was adopted, see *Exception to citizen test*, later.)

Yes. Continue

No. **STOP**

You can't claim this child as a dependent.

2. Was the child married?

Yes. See *Married person*, later.

No. Continue

3. Could you, or your spouse if filing jointly, be claimed as a dependent on someone else's 2022 tax return? (If the person who could claim you on their 2022 tax return is not required to file, and isn't filing a 2022 tax return or is filing a 2022 return only to claim a refund of withheld income tax or estimated tax paid, check "No.") See Steps 1, 2, and 4.

Yes. **STOP**

You can't claim any dependents. Complete the rest of Form 1040 or 1040-SR and any applicable schedules.

No. You can claim this child as a dependent. Complete columns (1) through (3) of the *Dependents* section on page 1 of Form 1040 or 1040-SR for this child. Then, go to Step 3.

3. Was the child under age 17 at the end of 2022?

Yes. Continue

No. You can claim the credit for other dependents for this child. Check the "Credit for other dependents" box in column (4) of the *Dependents* section on page 1 of Form 1040 or 1040-SR for this person.

4. Did this child have an SSN valid for employment issued before the due date of your 2022 return (including extensions)? (See *Social Security Number*, later.)

Yes. You can claim the child tax credit for this person. Check the "Child tax credit" box in column (4) of the *Dependents* section on page 1 of Form 1040 or 1040-SR for this person.

No. **STOP**  
You can claim the credit for other dependents for this child. Check the "Credit for other dependents" box in column (4) of the *Dependents* section on page 1 of Form 1040 or 1040-SR for this person.

### Step 3 Does Your Qualifying Child Qualify You for the Child Tax Credit or Credit for Other Dependents?

1. Did the child have an SSN, ITIN, or adoption taxpayer identification number (ATIN) issued on or before the due date of your return (including extensions)? (Answer "Yes" if you are applying for an ITIN or ATIN for the child on or before the due date of your return (including extensions).)

Yes. Continue

No. **STOP**

You can't claim the child tax credit or the credit for other dependents for this child.

2. Was the child a U.S. citizen, U.S. national, or U.S. resident alien? (See Pub. 519 for the definition of a U.S. national or U.S. resident alien. If the child was adopted, see *Exception to citizen test*, later.)

Yes. Continue

No. **STOP**

You can't claim the child tax credit or the credit for other dependents for this child.



## Is Tom's other parent claiming Tom per your legal agreement?

Yes, Tom's other parent will claim Tom for 2018 per our legal agreement.

No, Tom's other parent will not claim Tom for 2018 per our legal agreement.

What if I don't know?

# Forms going online: Pervasive, it's all the forms

15+ years ago: Paper forms phased out

Today: No paper forms. At all.

## 60RB-3.029 Public Use Forms.

(1) The following forms and instructions are used by the Agency for Workforce Innovation in its dealings with the public in the administration of the unemployment compensation program, and are incorporated by reference:

(a) AWI Form ERWC – “Employee’s or Employer’s Authorization and Request for Wage Records” (Rev. 02/06), which is available at the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_emp\\_forms.html](http://www.floridajobs.org/unemployment_uc_emp_forms.html).

(b) AWI Form AWA-01 – “Notarized Authorization for Release of Records” (Rev. 03/05), which is available at the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_emp\\_forms.html](http://www.floridajobs.org/unemployment_uc_emp_forms.html).

(c) IB-1 – “Initial Interstate Claim” (Rev. 10/07), which may be found by going to the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_claimbooklet.html](http://www.floridajobs.org/unemployment_uc_claimbooklet.html) and clicking on the “Florida Unemployment Compensation Claims Services’ Claim Book” link.

(d) IB-1(S) – “Initial Interstate Claim” (Spanish version) (Rev. 10/07), which may be found by going to the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_claimbooklet.html](http://www.floridajobs.org/unemployment_uc_claimbooklet.html) and clicking on the link beginning with the phrase “Haga clic aquí para acceder”.

(e) IB-1(C) – “Initial Interstate Claim” (Creole version) (Rev. 10/07), which may be found by going to the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_claimbooklet.html](http://www.floridajobs.org/unemployment_uc_claimbooklet.html) and clicking on the link beginning with the phrase “Chwazi sa a pòs”.

(f) AWI Form UC-310 – “Unemployment Compensation Application for Services” (Rev. 10/07) which may be found by going to the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_claimbooklet.html](http://www.floridajobs.org/unemployment_uc_claimbooklet.html) and clicking on the “Florida Unemployment Compensation Claims Services’ Claim Book” link.

(g) AWI Form UC-310(S) – “Unemployment Compensation Application for Services” (Spanish version) (Rev. 10/07) which may be found by going to the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_claimbooklet.html](http://www.floridajobs.org/unemployment_uc_claimbooklet.html) and clicking on the link beginning with the phrase “Haga clic aquí para acceder”.

(h) AWI Form UC-310(C) – “Unemployment Compensation Application for Services” (Creole version) (Rev. 10/07) which may be found by going to the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_claimbooklet.html](http://www.floridajobs.org/unemployment_uc_claimbooklet.html) and clicking on the link beginning with the phrase “Chwazi sa a pòs”.

(i) AWI Form UC-310 Supplement (Rev. 10/07) which may be found by going to the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_claimbooklet.html](http://www.floridajobs.org/unemployment_uc_claimbooklet.html) and clicking on the “Florida Unemployment Compensation Claims Services’ Claim Book” link.

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(k) AWI Form UC-310(C) Supplement (Rev. 10/07) which may be found by going to the Agency’s Internet site at [http://www.floridajobs.org/unemployment\\_uc\\_claimbooklet.html](http://www.floridajobs.org/unemployment_uc_claimbooklet.html) and clicking on the link beginning with the phrase “Chwazi sa a pòs”.

(l) AWI Form UCB-STC-3 – “Short Term Compensation Plan Application” (Rev. 11/01).

(m) AWI Form UCB-9 (04/01).

(n) AWI Form UCB-11 – “Wage Transcript and Determination” (Rev. 01/08).

(o) AWI Form UCB-34 (09/01).

(p) AWI Form UCB-45 – “Notice of Determination” (Rev. 02/08).

(q) AWI Form UCB-60 – “Weekly Claim Certification” (Rev. 02/03).

(r) AWI Form UCB-60V (Rev. 06/04).

(s) AWI Form UCB-121E (01/07).

(t) Employer Notification Letter (01/07).

(u) AWI Form UCB-200 – “Unemployment Compensation Fact-Finding Statement” (06/08).

(v) AWI Form UCB-200LD – “Labor Dispute” (06/08).

(w) AWI Form UCB-201 (06/08).

(x) AWI Form UCB-202 (06/08).

(y) AWI Form UCB-204 (06/08).

(z) AWI Form UCB-205 (06/08).

(aa) AWI Form UCB-205SIF (06/08).

(bb) AWI Form UCB-206 – “Reporting Requirements” (06/08).

(cc) AWI Form UCB-207 – “Unemployment Compensation Fact-Finding Statement” (06/08).

(dd) AWI Form UCB-208 – “Voluntary Leaving” (06/08).

(ee) AWI Form UCB-209 – “Employment Status” (06/08).

(ff) AWI Form UCB-209I (06/08).

## AGENCY FOR WORKFORCE INNOVATION UNEMPLOYMENT COMPENSATION APPLICATION FOR SERVICES

PLEASE PRINT YOUR INFORMATION IN BLUE OR BLACK INK ONLY FOR ALL ITEMS (on both sides of the application) AND SIGN THIS FORM.

Complete an AWI UC-310 Supplement for other employment you have had during the last 18 months.

1. Name: (First, Middle, Last)		Social Security Number: (see Privacy Act Statement on back of form)	
1a. Other Names Used During Employment		FOR OFFICE USE ONLY, DO NOT WRITE IN THE GRAY AREA BELOW	
2. Local Mailing Address Street Address		EFF. DATE: M D Y FILED: M D Y	
City: State: Zip: Apt.# Residence County:		CLAIM TYPE: NEW <input type="checkbox"/> ADOL <input type="checkbox"/> ROO <input type="checkbox"/> T <input type="checkbox"/> REQUALIFY <input type="checkbox"/>	
3. Telephone Number: Alternate phone number: or ( )		STATUS: UC <input type="checkbox"/> X <input type="checkbox"/> FE <input type="checkbox"/> CWC <input type="checkbox"/> EB <input type="checkbox"/> OTHER <input type="checkbox"/>	
4. Date of Birth: Month Day Year S. Sex: M <input type="checkbox"/> F <input type="checkbox"/> 6. Height/Weight: /		ISSUE (check one): UC-13 <input type="checkbox"/> MOOS <input type="checkbox"/> STDK <input type="checkbox"/> METHOD <input type="checkbox"/>	
7. (Statistical use only) Are you of Hispanic descent? <input type="checkbox"/> YES <input type="checkbox"/> NO Indicate your primary ethnic affiliation: <input type="checkbox"/> White (1) <input type="checkbox"/> American Indian or Alaskan Native (4) <input type="checkbox"/> Black or African American (2) <input type="checkbox"/> Hawaiian or Pacific Islander (5) <input type="checkbox"/> Asian (3) <input type="checkbox"/> Information not available (6)		LOCAL OFFICE: LOCAL OFFICE <input type="checkbox"/> FIPS <input type="checkbox"/> RES. COUNTY <input type="checkbox"/> WOB <input type="checkbox"/>	
8. Identification (ID): Driver's License # State of Issuance: State Identification # State of Issuance:		IB4 STATE/FIPS CODE: LOCAL OFFICE <input type="checkbox"/> FIPS <input type="checkbox"/> RES. COUNTY <input type="checkbox"/> WOB <input type="checkbox"/>	
9. Check the number which corresponds to the highest grade you completed: 1. Did not finish high school - Highest grade completed was: [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 [ ] 6 [ ] 7 [ ] 8 [ ] 9 [ ] 10 [ ] 11 [ ] 12 2. High School Diploma or GED <input type="checkbox"/> 3. AA or Post Secondary Vocational/Technical Certificate of Completion <input type="checkbox"/> 4. BS/BA <input type="checkbox"/> 5. MS/MIA <input type="checkbox"/> 6. Doctorate <input type="checkbox"/>		Primary DOT Code: Mo. Exp. Secondary DOT Code: Mo. Exp.	
11. I am a citizen of the United States <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> If no, I am authorized to work in this country <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/>		10. Are you handicapped as defined in Section 504 of the Rehabilitation Act of 1973? <input type="checkbox"/> YES <input type="checkbox"/> NO	
11a. Citizenship: <input type="checkbox"/> US Citizen/Naturalized <input type="checkbox"/> Lawfully Admitted Alien/Refugee <input type="checkbox"/> Haitian Entrant <input type="checkbox"/> Cuban Entrant <input type="checkbox"/> Other		12. Most Recent Employer: Employer ID #	
12. Most Recent Employer: Employer's Street Address		Dates Worked: FROM: Mo. Day Year TO: Mo. Day Year	
City: State: Zip:		Total Gross Earnings with this Employer: \$	
Employer's Local Mailing Address (if different than above):		Total Gross Earnings since Surrender of this work: \$	
City: State: Zip:		Occupation or Title:	
Employer's Telephone Number: Salary Rate: \$ (Hour, Week, Month, Year)		Tools/Equipment Used:	
Reason for Separation: <input type="checkbox"/> Permanent Lay-off <input type="checkbox"/> Suspension <input type="checkbox"/> Temporary Lay-off <input type="checkbox"/> Leave of Absence <input type="checkbox"/> Out of Voluntary Lay-off <input type="checkbox"/> Discharged, Job Performance <input type="checkbox"/> Working Reduced Hours <input type="checkbox"/> Discharged, Other		Are you scheduled to return to work for this employer? <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> When?	
Explain Reason for Separation:		13. Have you received, or will you receive any of the following payments? Vacation Pay <input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> Amount: \$	

## Florida Department of Economic Opportunity PIN reset fixes one problem but new issue arises

Department's software fix creates need for Identity verification



TALLAHASSEE, Fla. – The now infamous Florida Department of Economic Opportunity PIN reset debacle was successfully addressed and updated this week; however, the software remedy saw thousands of people still unable to apply for weekly benefits because their state unemployment accounts were locked and, in some cases, their identifications needed to be verified again.





## Creative Cloud

It's the end of the line for boxed versions of Photoshop, InDesign, and the rest.

ANDREW CUNNINGHAM - 5/6/2013, 7:00 PM



Adobe's Creative Cloud, once optional, is now the only way to get access to the latest versions of the company's software.

Adobe's Creative Suite and the applications that make it up—Photoshop, InDesign, Dreamweaver, Premiere, and a host of others—have been staples of many professional toolboxes for almost a decade now. The full

This article is more than 1 year old

## Microsoft explains Windows as a SERVICE – but one version remains a distant dream

All users on the same version? Not in our lifetime, chum

[Tim Anderson](#)

Mon 9 Feb 2015 | 08:58 UTC

Windows chief Terry Myerson proclaimed the advent of Windows-as-a-service at an event last month. But what does that mean? A more recent post from Enterprise and Security Directory Jim Alkove offers some clues.

First, here is what Myerson said:

**Once a Windows device is upgraded to Windows 10, we will continue to keep it current for the supported lifetime of the device – at no additional charge. With Windows 10, the experience will evolve and get even better over time. We'll deliver new features when they're ready, not waiting for the next major release. We think of Windows as a Service – in fact, one could reasonably think of Windows in the next couple of years as one of the largest Internet services on the planet.**

**And just like any Internet service, the idea of asking 'What version are you on?' will cease to make sense – which is great news for our Windows developers.**

A rosy picture; but it is never that easy. Apple's iOS platform is the furthest ahead in terms of keeping users on the latest and greatest, but still not every user upgrades and older devices are stuck with old versions, or users may prefer them for performance reasons.

Businesses tend to be more conservative than consumers, preferring a stable and consistent platform despite missing out on new features. Users tend to run a limited set

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Wilhelmina Randtke, Head of Libraries Technologies and Systems, Georgia Southern University Libraries  
Code4Lib Conference 2024, May 15, 2024, Ann Arbor, Michigan