



Open Recognition Networks

Stephen Downes

October 26, 2020

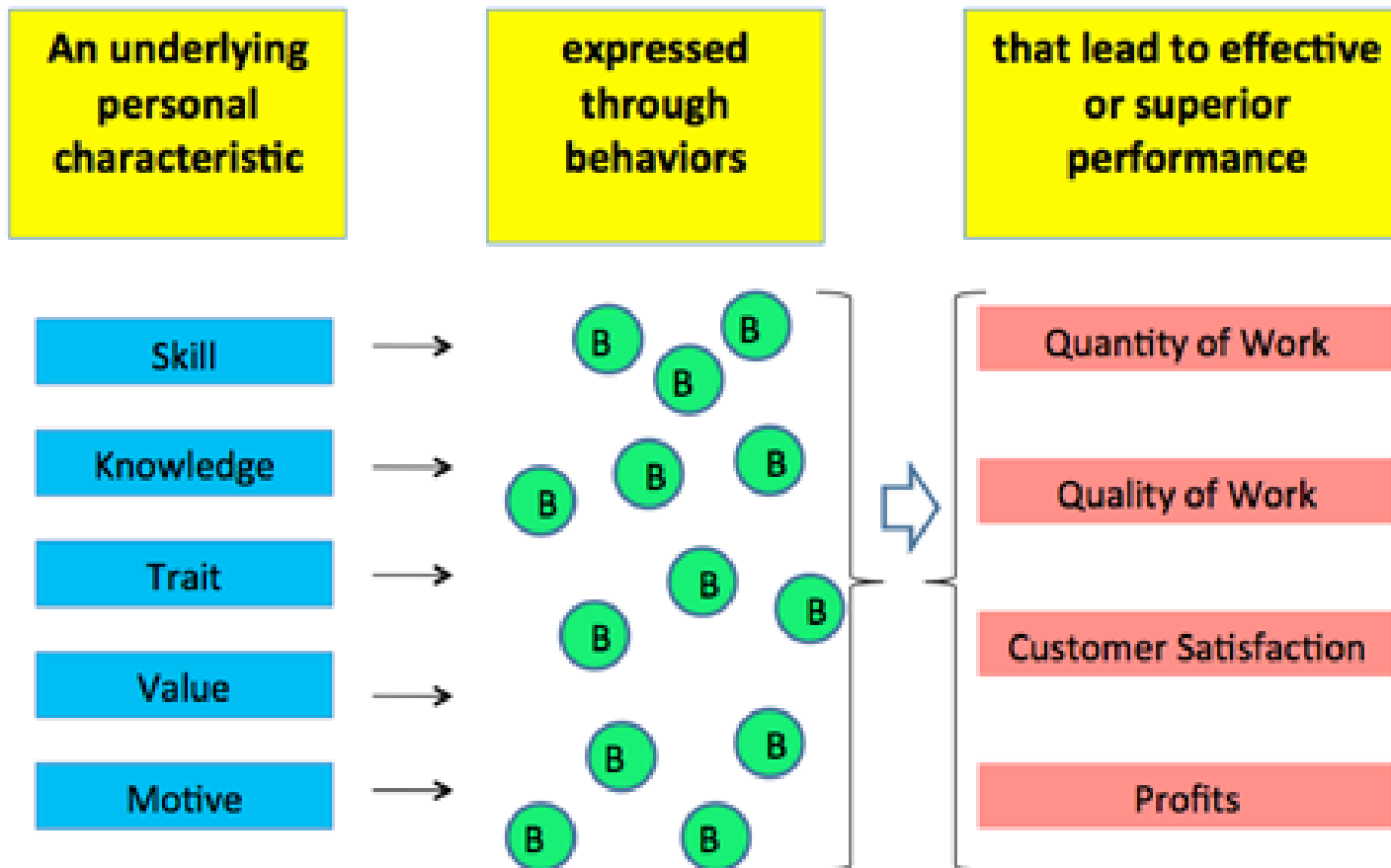
ePIC 2020 – 18th International Conference

<https://www.downes.ca/presentation/526>

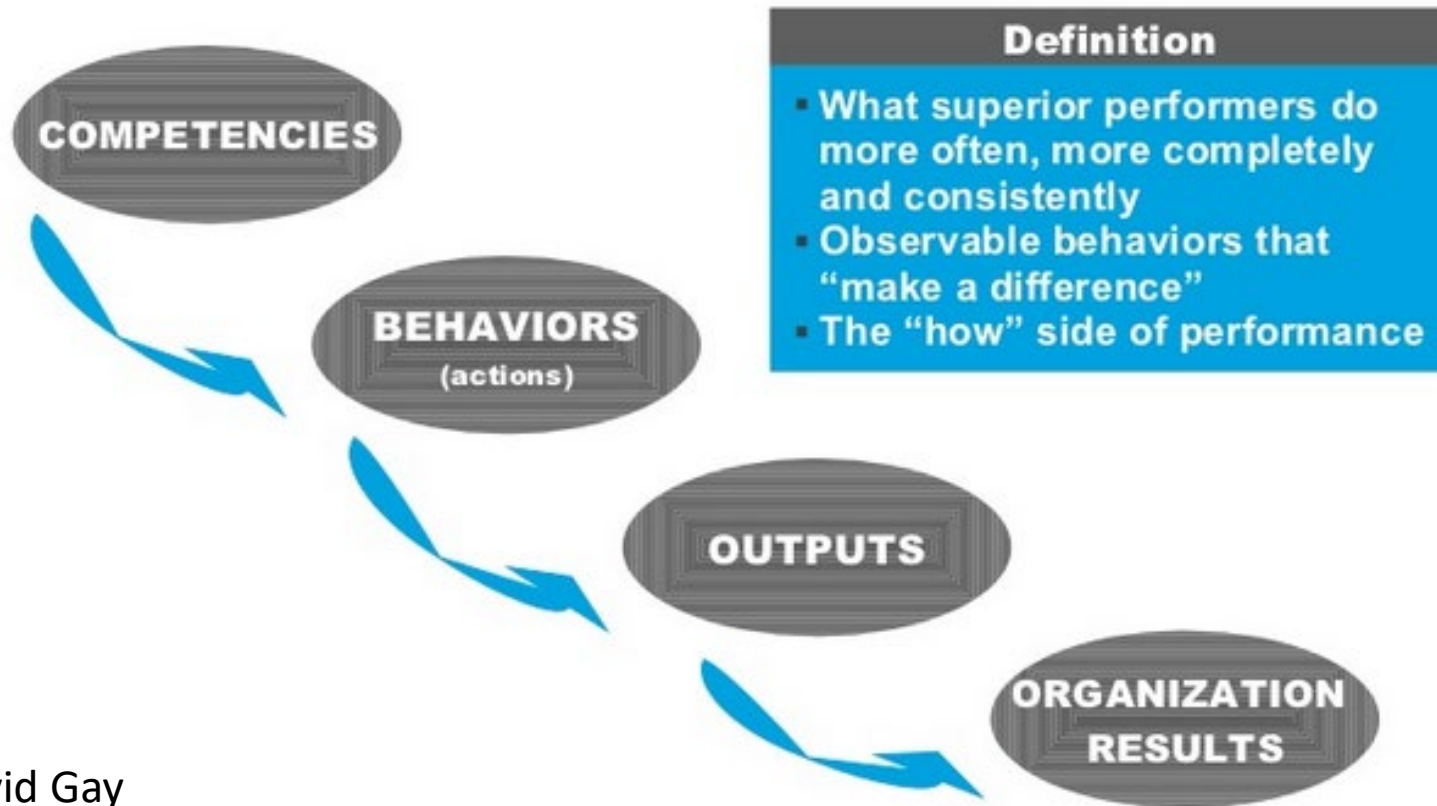
Competencies and Stackable Credentials



What are Competencies?



Evaluating Competencies?



David Gay

<https://www.slideshare.net/davidgay/overview-of-competencies-benefits-and-uses-of-a-competencybased-system>

Skills and Tasks

← → ↻ 🏠 <https://el30.mooc.ca/cgi-bin/page.cgi?page=PLE#>

Read Make Find Listen List «

📖 🐞 Reader Edit

🔍 Listing 1 to 8 of 8 tasks

- 🔗 ✕ Subscribe to the course feeds
- 🔗 ✕ Create a Model Graph
- 🔗 ✕ Create Your Experience
- 🔗 ✕ Being a Member of the Community
- 🔗 ✕ Create and Award Yourself a Digital Badge
- 🔗 ✕ Create a Blog and Add Its RSS Feed to the Course
- 🔗 ✕ Create a Content-Addressed Resource
- 🔗 ✕ Create an Identity Graph

Create a Model Graph

Task link

B I 🔗 🗨️ 🖼️ 📄 📑 Ω ⋮ ⋮ ⋮ ⋮ ⋮

This week's task has three parts

1. Create a model graph of some aspect of the E- be an actual graph, only a representation of what an actual graph might look like. We've already seen, eg., graphs on the relations between people in the course. Could there be other types of graphs?
2. In your model, consider how the states of the entities in that graph might vary. Consider not only how nodes might vary (eg., a person might have a different height over time) but also how the edges might vary (eg., a person might have a different strength of relation (calculated how?) with another person over time).
3. In your model, consider how knowledge about the changes in states in the graph might be used.

Due 2020/10/24 13:51

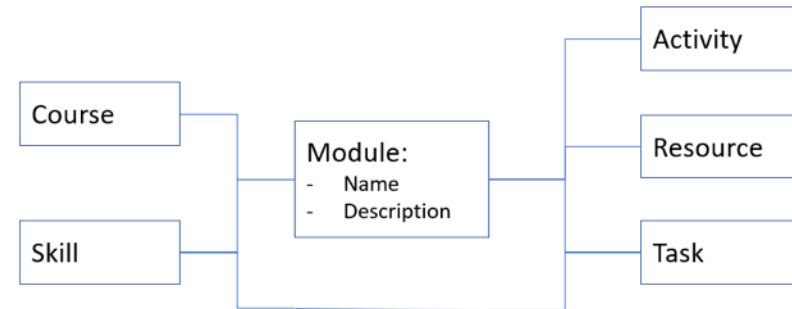
Module • Graph [Edit] [Remove]
Add Module [v] Update

Badge • Graph [Edit] [Remove]
• [Edit] [Remove]
Add Badge [v] Update

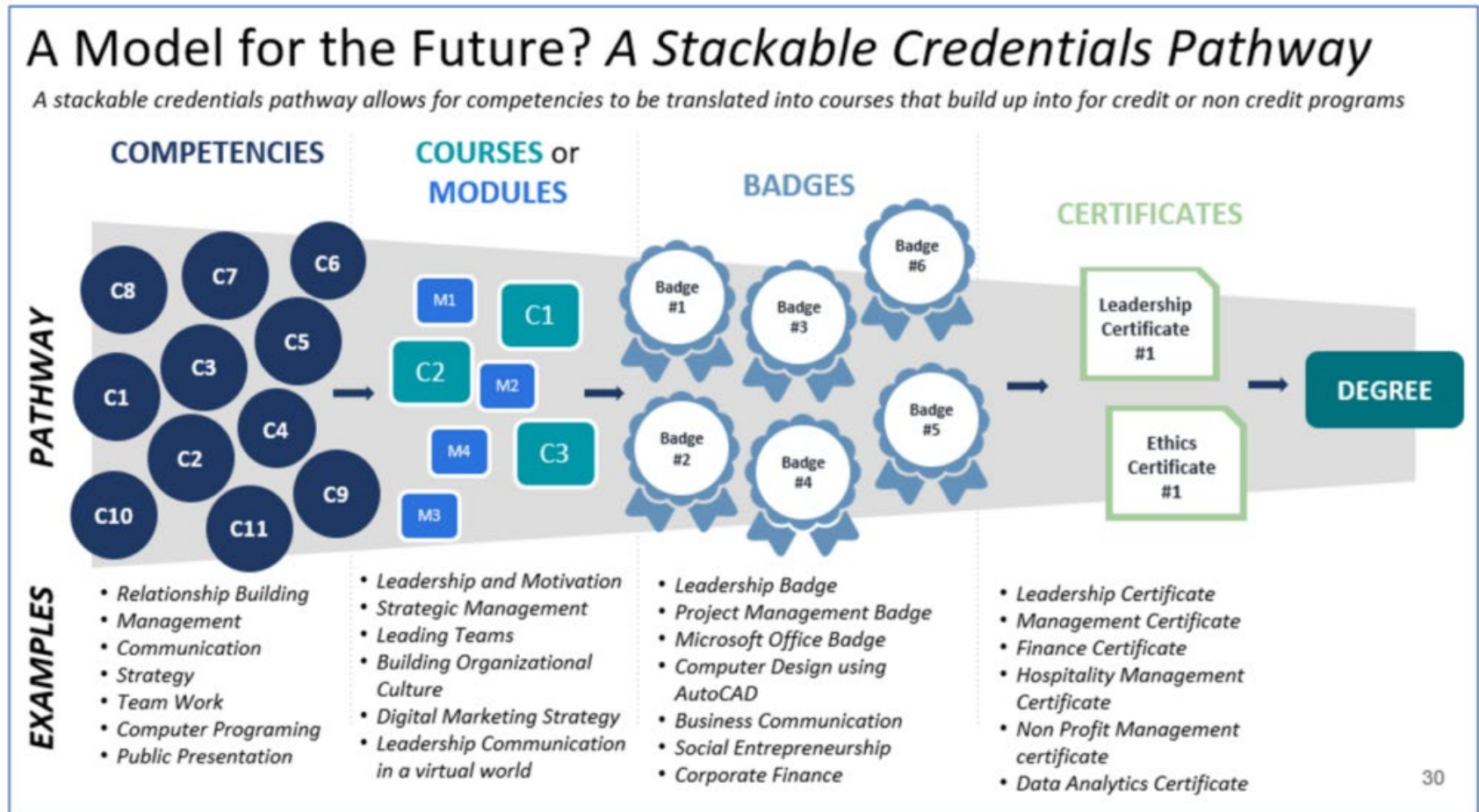
Author Add Author Update

Feed Add Feed Update

[Show Record Data]



Stackable Credentials



Jim Fong, UPCEA, “Faster Forward to a New Economy and Implications for Higher Education,” Presentation. August 6, 2020.

Badges and Blockchain



Badge Infrastructure

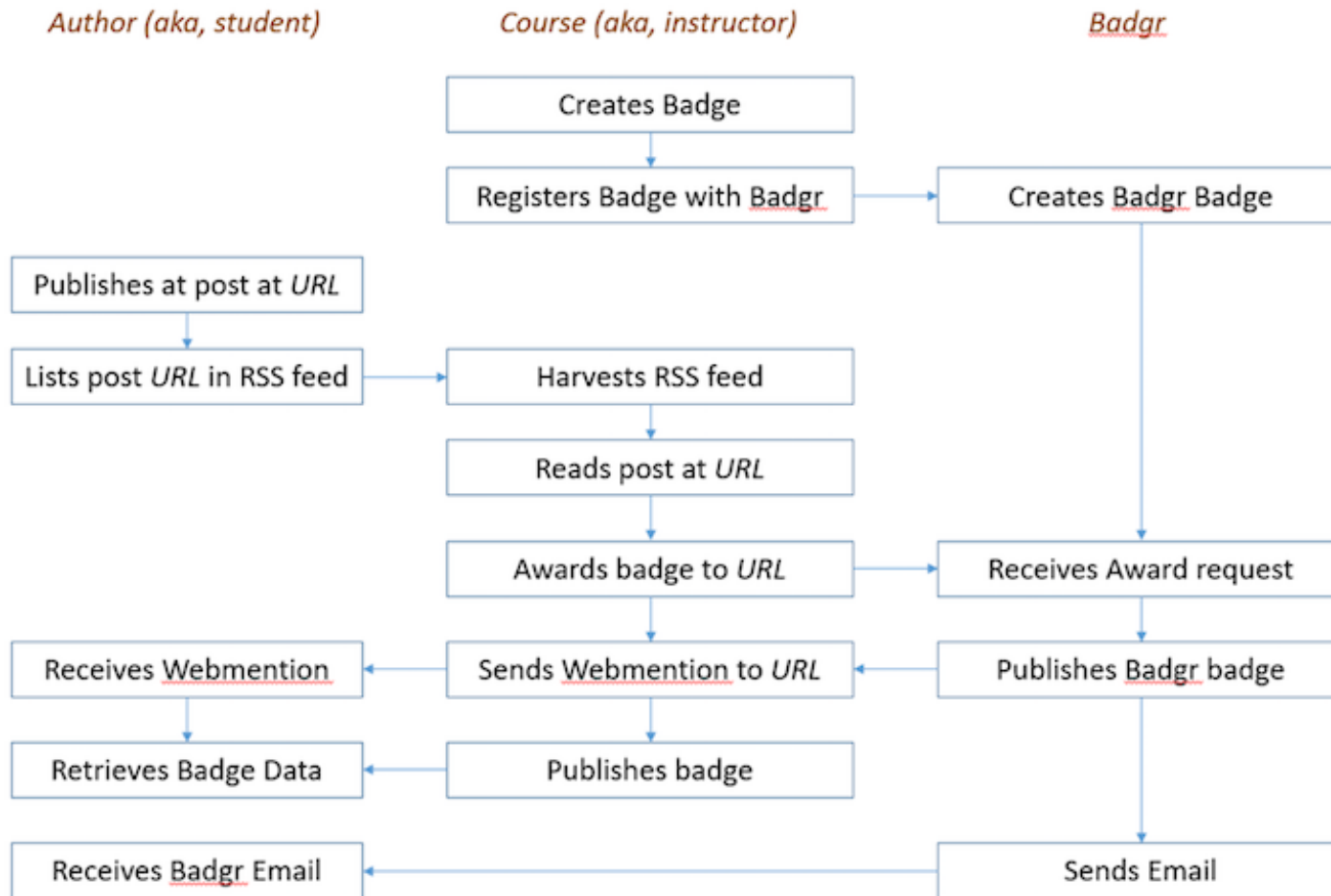
The image displays three sequential screenshots of the Badgr web application interface, illustrating the process of creating and awarding a badge.

- Left Screenshot: Create Issuer**
 - Header: badgr logo, "Create Issuer", and subtext: "Creating an issuer allows you to award badges to recipients."
 - Form fields: IMAGE (OPTIONAL) with a placeholder image (e330_mascot.jpg) and a "CHANGE" button; NAME (E-Learning 3.0); WEBSITE URL (https://e330.mooc.ca); CONTACT EMAIL (stephen@downes.ca); DESCRIPTION (Badges issues by E-learning 3.0 course, hopefully via API from gRSshopper).
 - Buttons: "CANCEL" and "ADD ISSUER".
- Middle Screenshot: Add Badge Class**
 - Header: badgr logo, "Add Badge Class", and "BACKPACK" link.
 - Form sections: "BASIC INFORMATION" (IMAGE: @generate.randoms, NAME: Data, SHORT DESCRIPTION: Create a blog and upload its RSS feed to the course.); "CRITERIA" (HOW IS THIS BADGE EARNED?: There are three parts to this task: - create a blog of some sort... - find the RSS feed for your blog... - Enter the RSS Feed URL into the form I will be providing).
 - Buttons: "UPLOAD" and "Write Preview" (with "Markdown Supported" indicator).
 - URL field: https://e330.mooc.ca/task/9
- Right Screenshot: Award Badge**
 - Header: badgr logo, "Award Badge", and navigation links: "BACKPACK", "COLLECTIONS", "ISSUES", "ACCOUNT".
 - Text: "Award badges to individuals below, or click 'back to bulk' award to multiple recipients at once."
 - Form sections: "RECIPIENT INFORMATION" (recipient name: Stephen Downes, email address: stephen@downes.ca, "Verify recipient by email" checkbox); "EVIDENCE" (HOW IS THIS BADGE EARNED?: [Empty text area], "Write Preview" buttons, "Add Additional Evidence" checkbox); "What's Evidence?" (Text area for evidence, "Learn More" button).
 - Buttons: "Learn More" (under recipient info), "Learn More" (under evidence), "Add Optional Details" (with "Add" button).

<https://info.badgr.com/>

https://badge.wiki/wiki/Badge_platforms

Badge Workflow



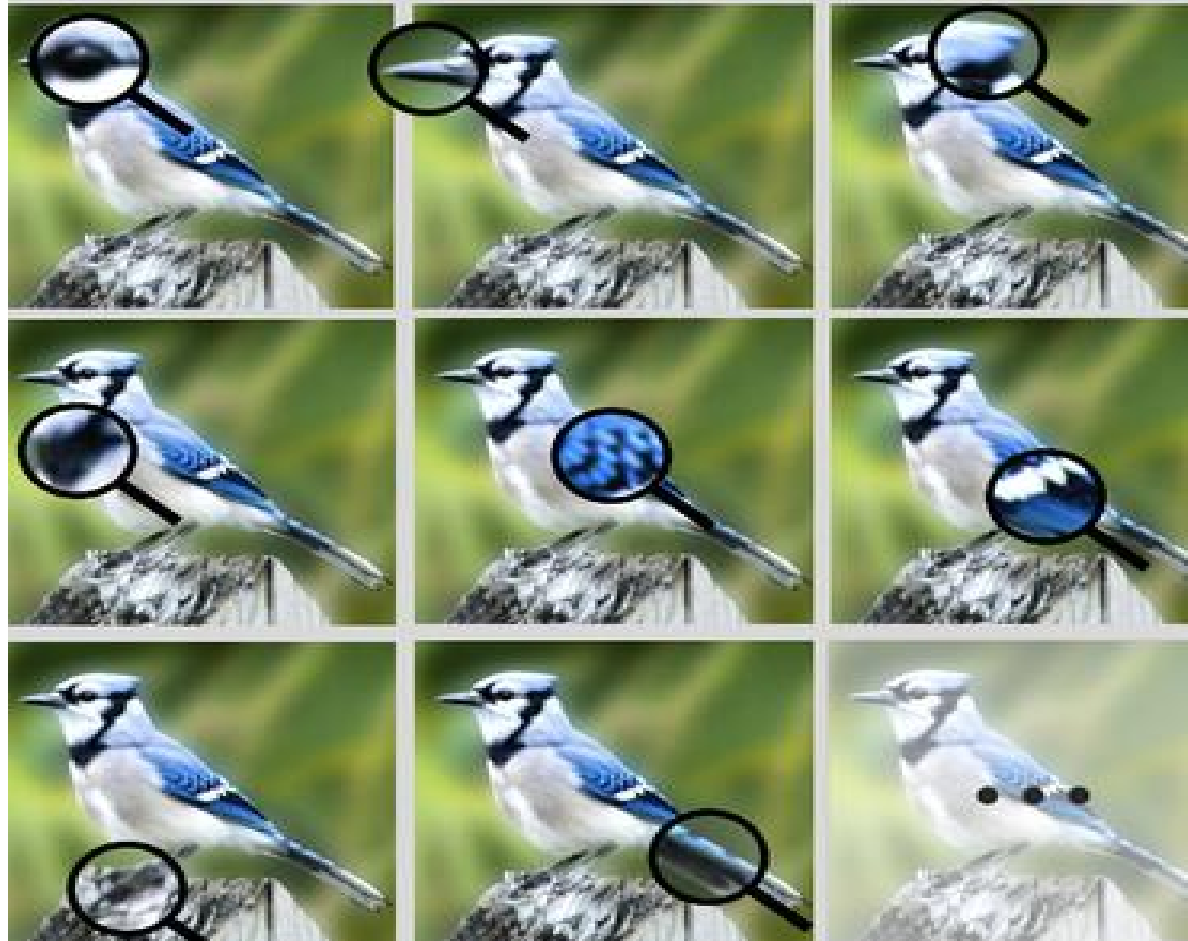
<https://jl4d.org/index.php/ejl4d/article/view/348/436>

Recording on Blockchain

```
Save Copy Collapse All Expand All
length: 1
chain:
  0:
    index: 0
    timestamp: 1545417481
    transactions:
      0: {}
      1:
        recipient:
          email: "stephen@downes.ca"
          name: "Stephen Downes"
        sender:
          email: null
          url: "https://eL30.mooc.ca/"
          name: "E-Learning 3.0"
        badge:
          badge_entityid: "m1-bQL4ISHeL_oPGlKgDYw"
          badge_url: "https://eL30.mooc.ca/badge/1/21812"
        evidence:
          url: "http://www.downes.ca/post/68924/rd"
      2: {}
      3: {}
      4: {}
    proof: 761
    previous_hash: "BNUbNG87FYj8zpoRHPm/e60uGNTK1kckooXE+trPPTs="
```

<https://github.com/Downes/blockchain>

A Proliferation of Certifications



How Many is Enough?



<https://asiatimes.com/2020/03/russia-puts-a-lid-on-military-medals/>

Credential Organizations

NOCTI

Credentialing Organization Compare

Basic Info

Connect to this Organization

About this Organization

NOCTI is the largest provider of industry-based credentials and industry association certifications for career and technical education (CTE) programs across the nation. NOCTI credentials are nationally accredited, recommended for college credit, meet federal accountability requirements, help guide data-driven instructional improvement, and can assist with teacher evaluation systems. NOCTI provides a credible solution for employees and employers who need objective verification of technical knowledge and skills.

Mission:
Building a competent workforce through creative learning solutions.

Mission Statement

Purpose:
To provide technical industry-based credentials based to both public and private entities (e.g., states, districts, industry associations) engaged in preparing individuals for employment opportunities in technical fields of study.

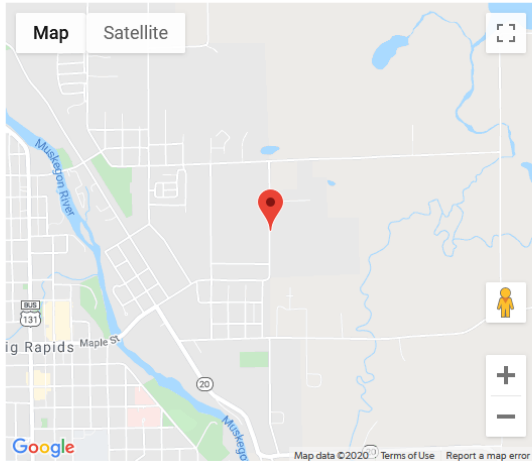
Purpose

Organization Type

Assessment Body Business or Industry Association
Certification Body Primarily Online Professional Association
Vendor

Location Info

Location Listing



Map Satellite

500 N Bronson Ave, Big Rapids, Michigan 49307-9036, United States

Contact
Main Phone Number: 231-796-4890
Toll Free

More Info

Connections

- 119 Owns/Offers 119 Credential(s)
- 121 Owns/Offers 121 Assessment(s)
- 3 Owns 3 Competency Framework(s)
- 1 Has 1 Condition Manifest
- 2 Has 2 Cost Manifests

Quality Assurance

- 1 Quality Assurance
- 1 QA Identified as Received by Credentialing Organizations on 1 Credential

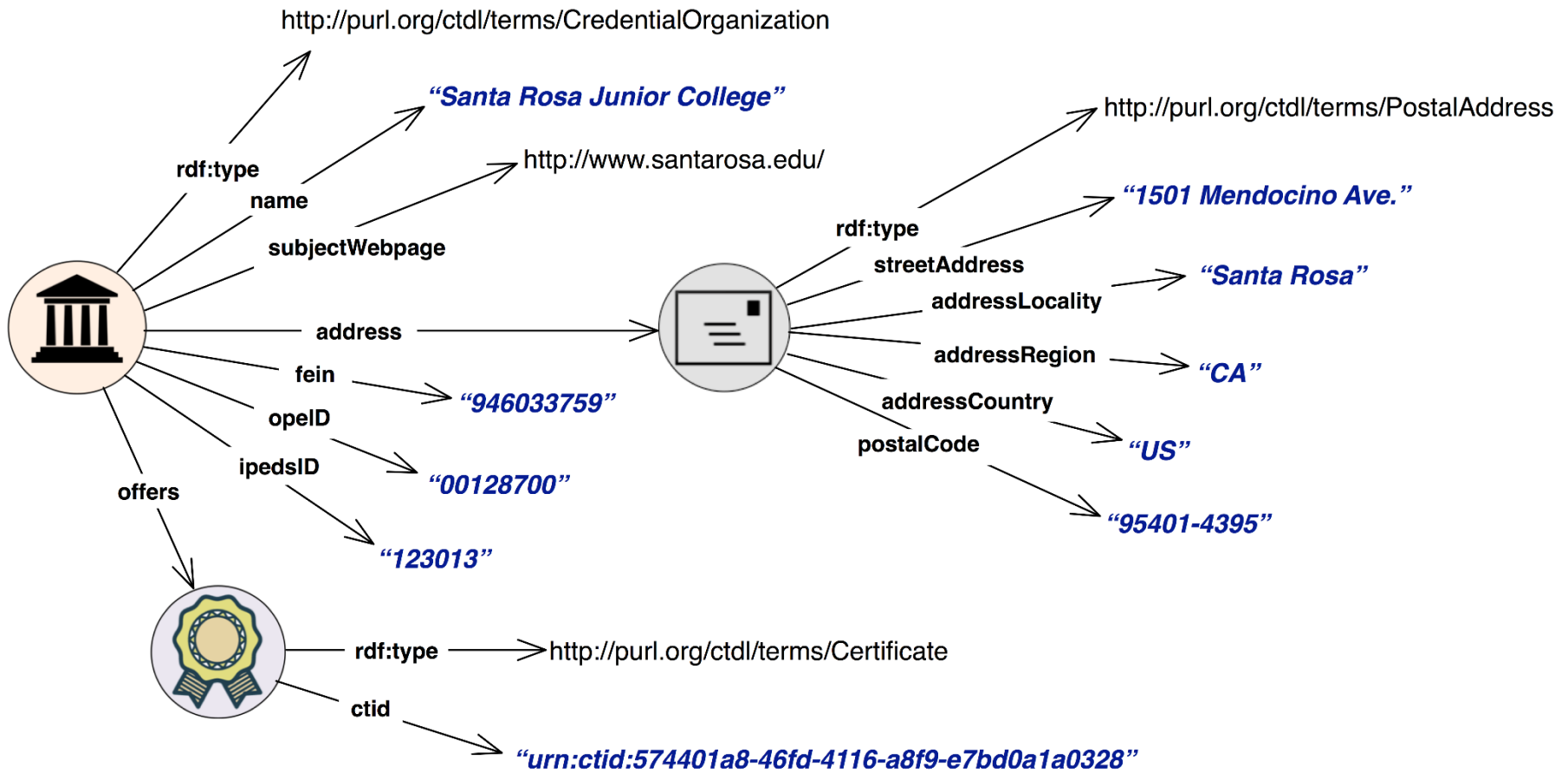
Jurisdiction Assertions

- 1 Jurisdiction Assertion

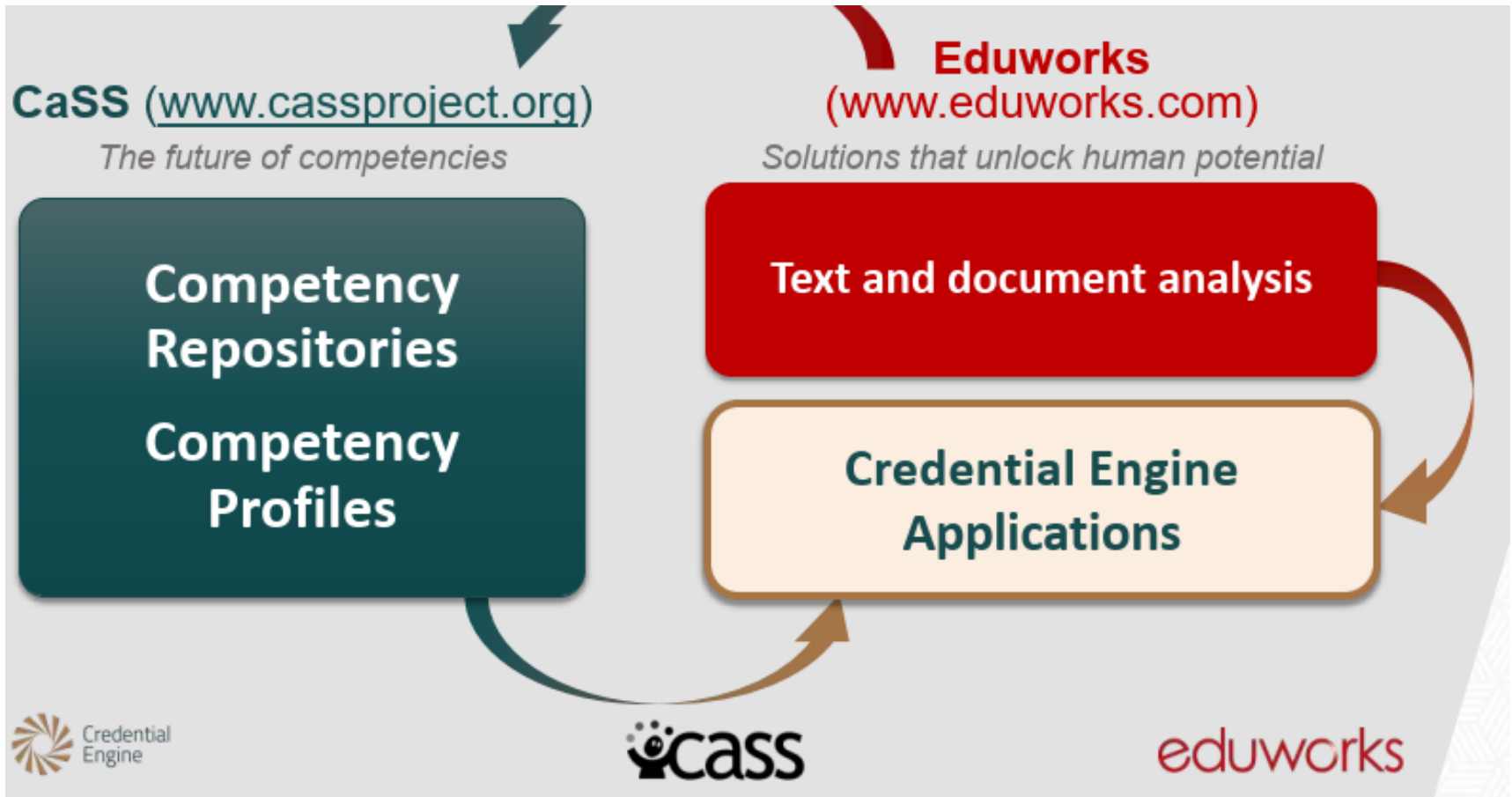
Details

- 1 Appeal Process
- 1 Complaint Process
- 1 Review Process

Credential Transparency



Credential Applications



<https://www.slideshare.net/CredentialEngine/cass-application>

How do we evaluate certifications



Credential Evaluation Services



<https://www.cicic.ca/1566/overview.canada>

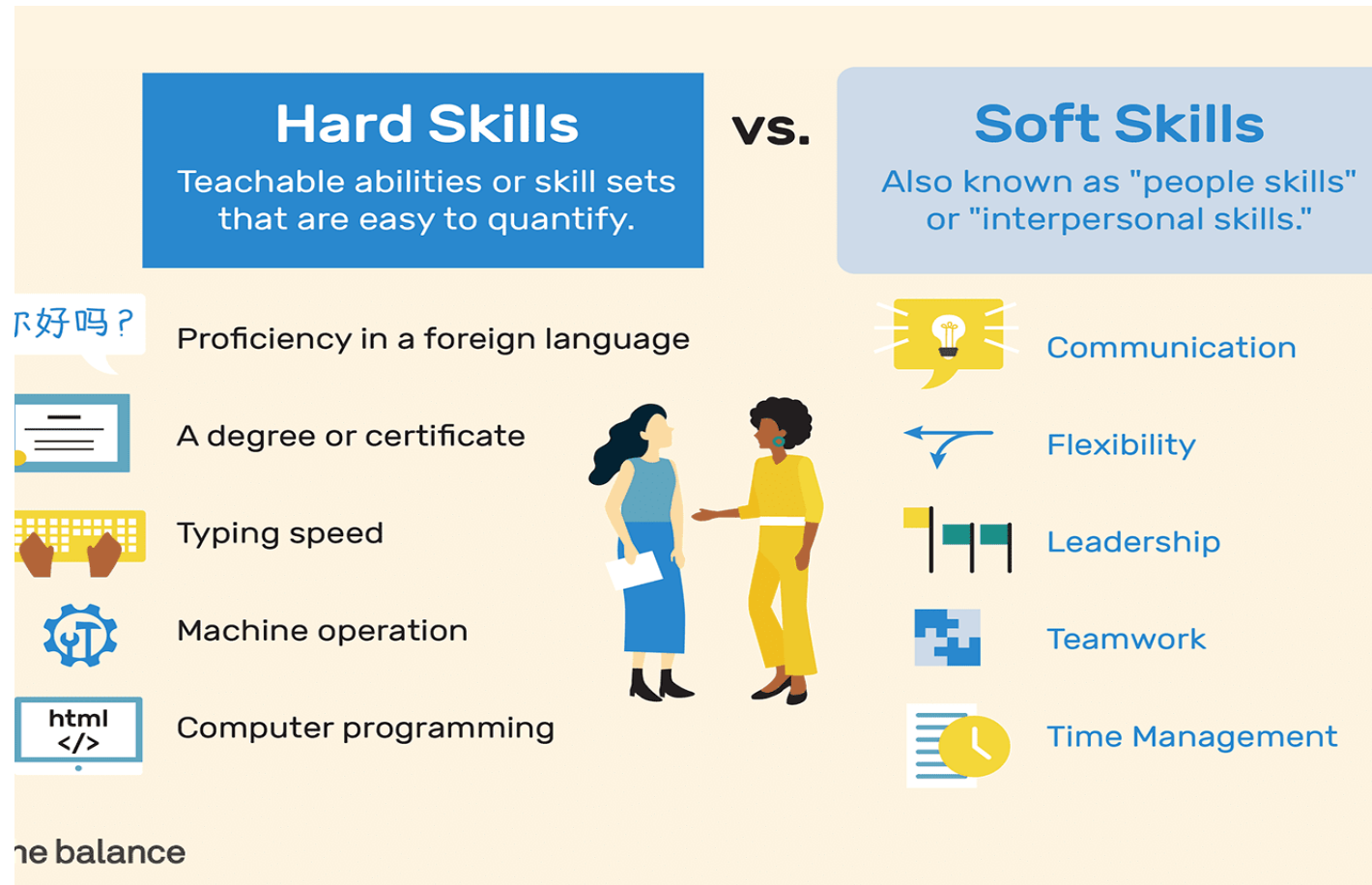
This is Microsoft gifting, no?



<https://github.githubassets.com/images/modules/site/downloads/certifications/GitHub.Certified.Practitioner.Exam.skills-outline.pdf>

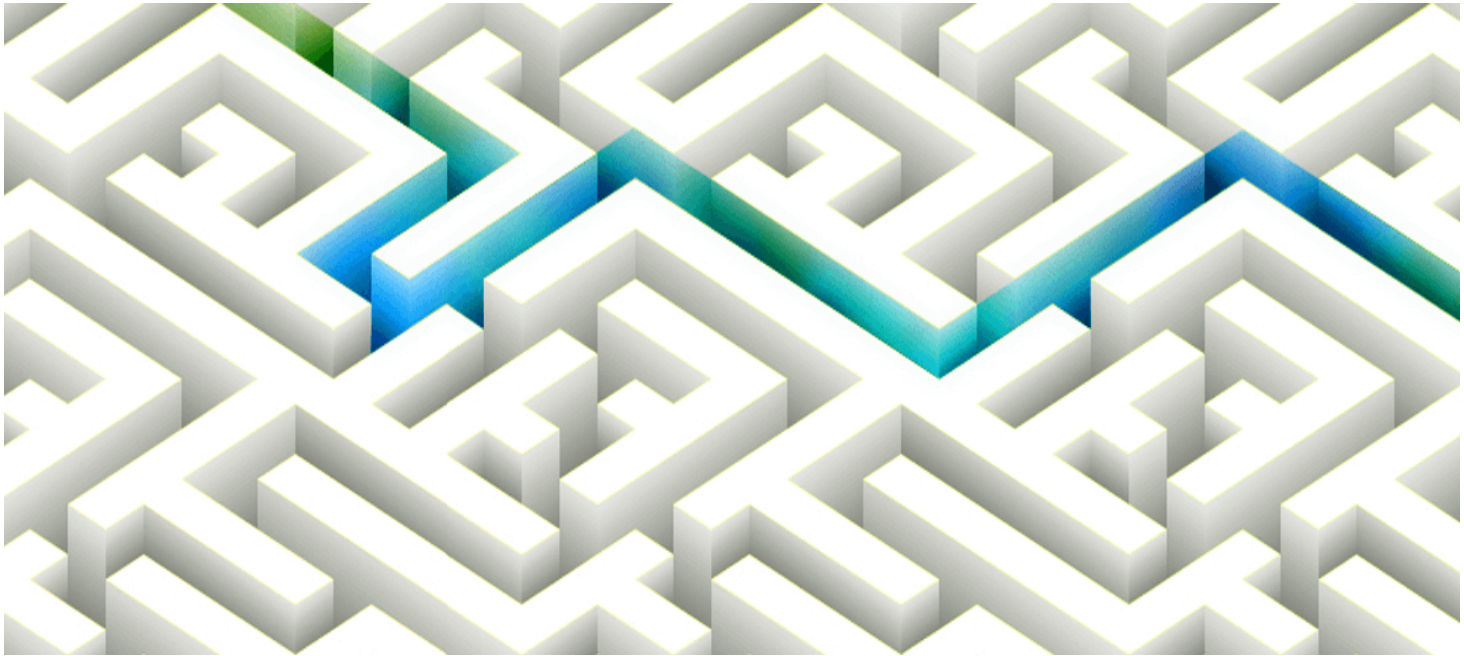
<https://m.tzyl.nl/@ton/105080168060564907>

In Whose Interest?



<https://www.thebalancecareers.com/hard-skills-vs-soft-skills-2063780>

Credential Transfer



<https://www.academyone.com/higher-ed-software-and-technology-solutions/will-my-credits-transfer>

Childfolio



Capture

unlimited moments, photos, videos, notes and audio

See it >

Organize

quickly tag by child's interest, learning style and more

See it >

Assess

by linking skills to authentic learning moments

See it >

Reflect

with private notes and decide what to share or not share with others

See it >

Share

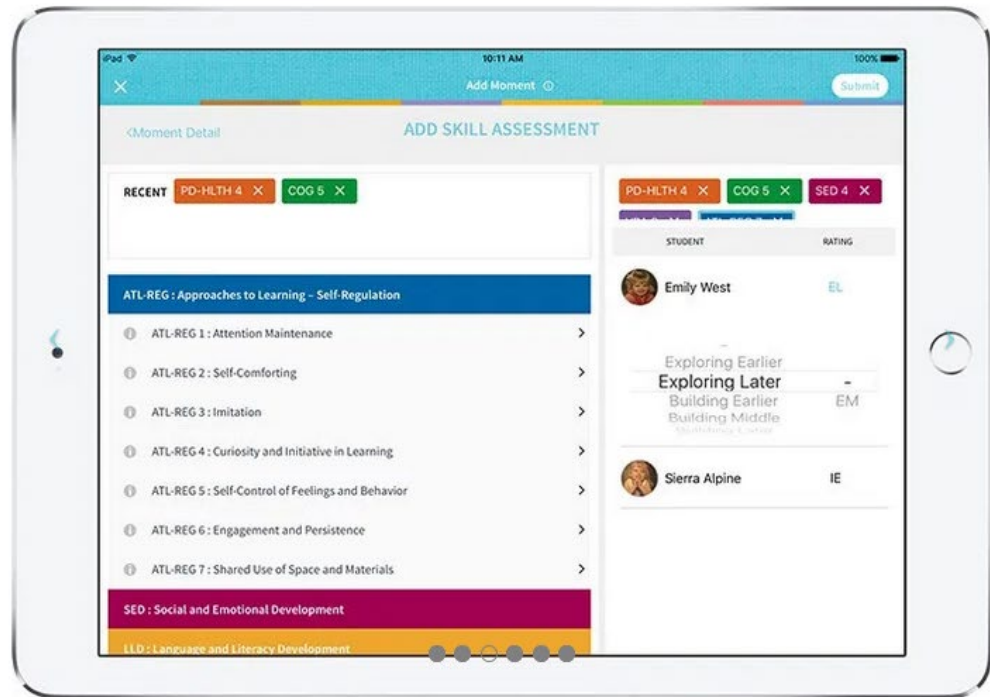
stories and playful moments with families

See it >

Analyze

learning over time with one-touch skill and project reports

See it >



Forms of Recognition



Onboarding

Proactive detection.

Continuous monitoring, detection, and prevention of endpoint-related hitches.

Cyclic checks.

With periodic health checks, users can manage issues including timely recognition, faster triage and more.



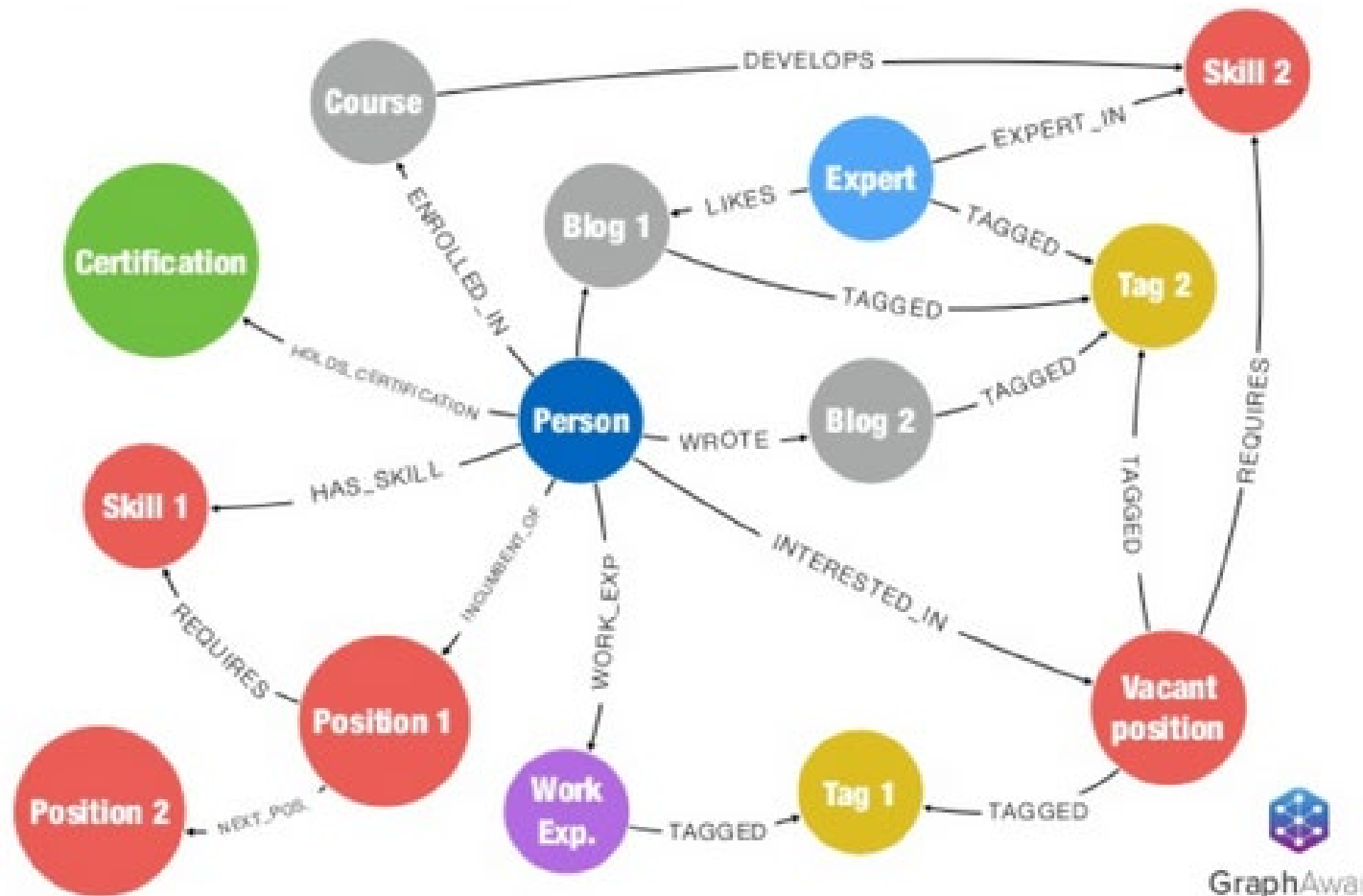
Onboarding assistance.

The guidance of our resolute support team for system implementation and setup.

Dedicated touchpoint.

A devoted account manager for fostering customer engagement to enhance the customer experience.

Career Management



Diversity and Inclusion

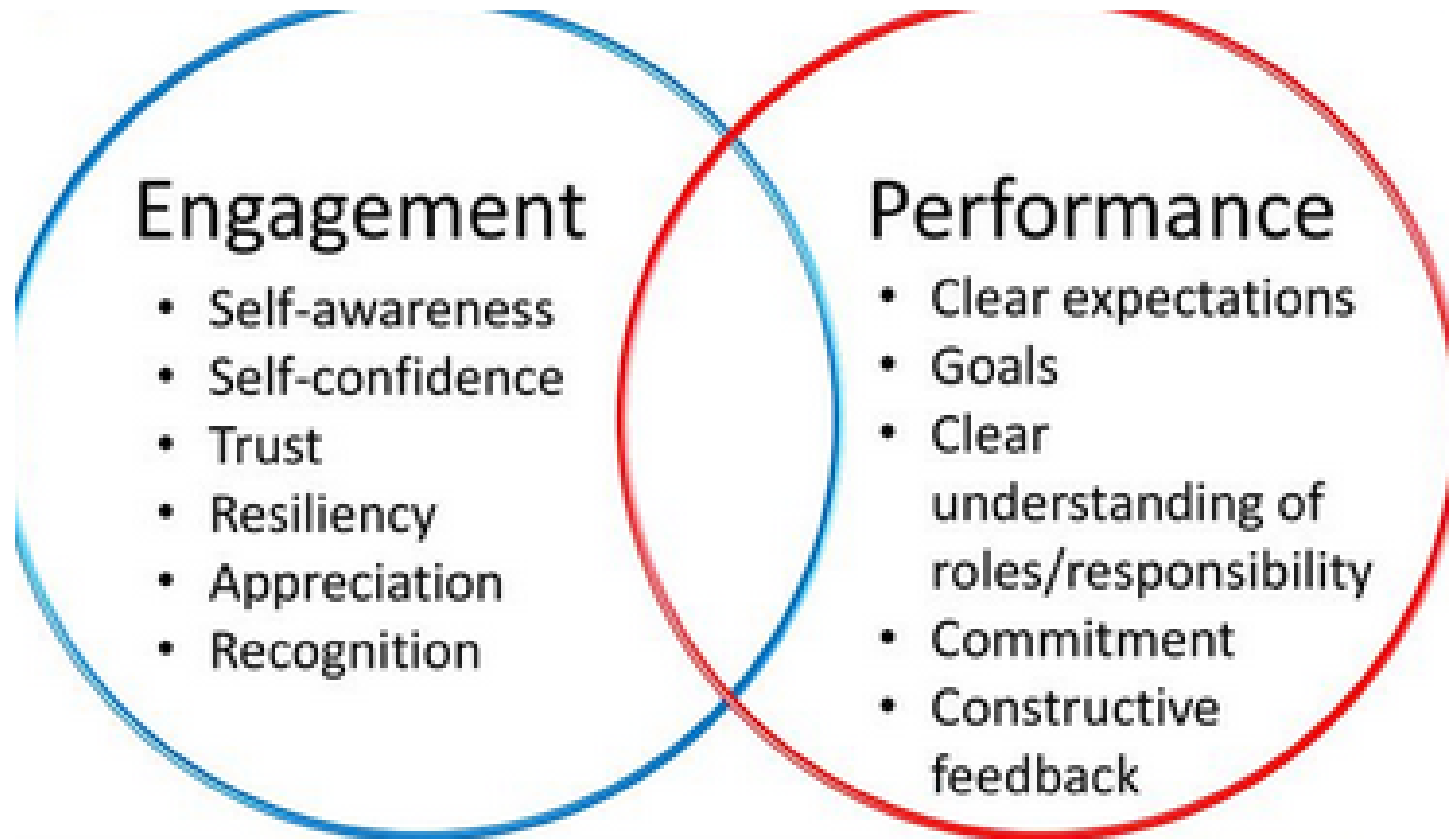


Wolfberg, et. al. Recognizing diversity at multiple levels -

<https://www.sciencedirect.com/science/article/pii/S0885200699800325>

Image: Deloitte - <https://www2.deloitte.com/us/en/insights/topics/talent/six-signature-traits-of-inclusive-leadership.html>

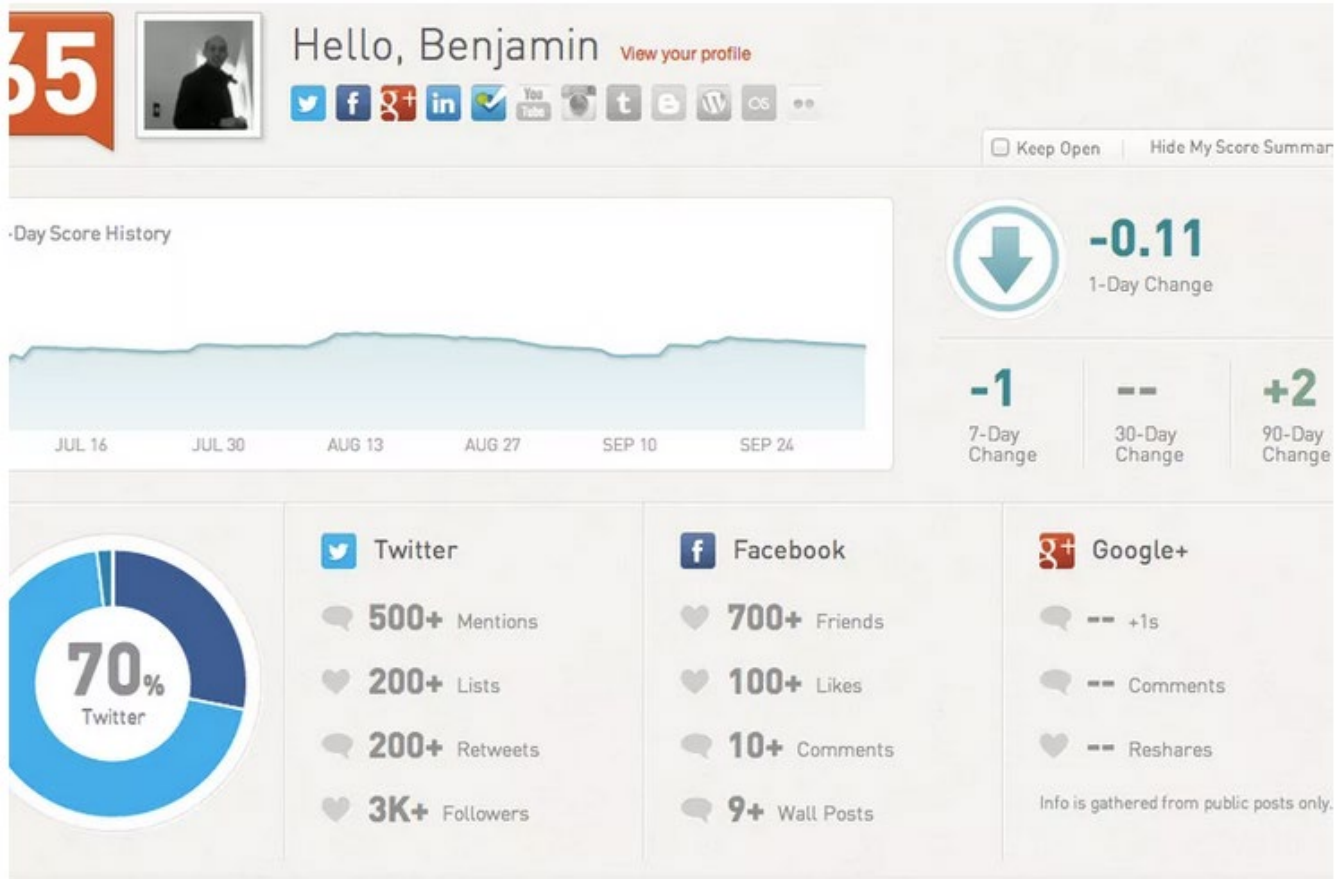
Performance and Goals



Peer Recognition



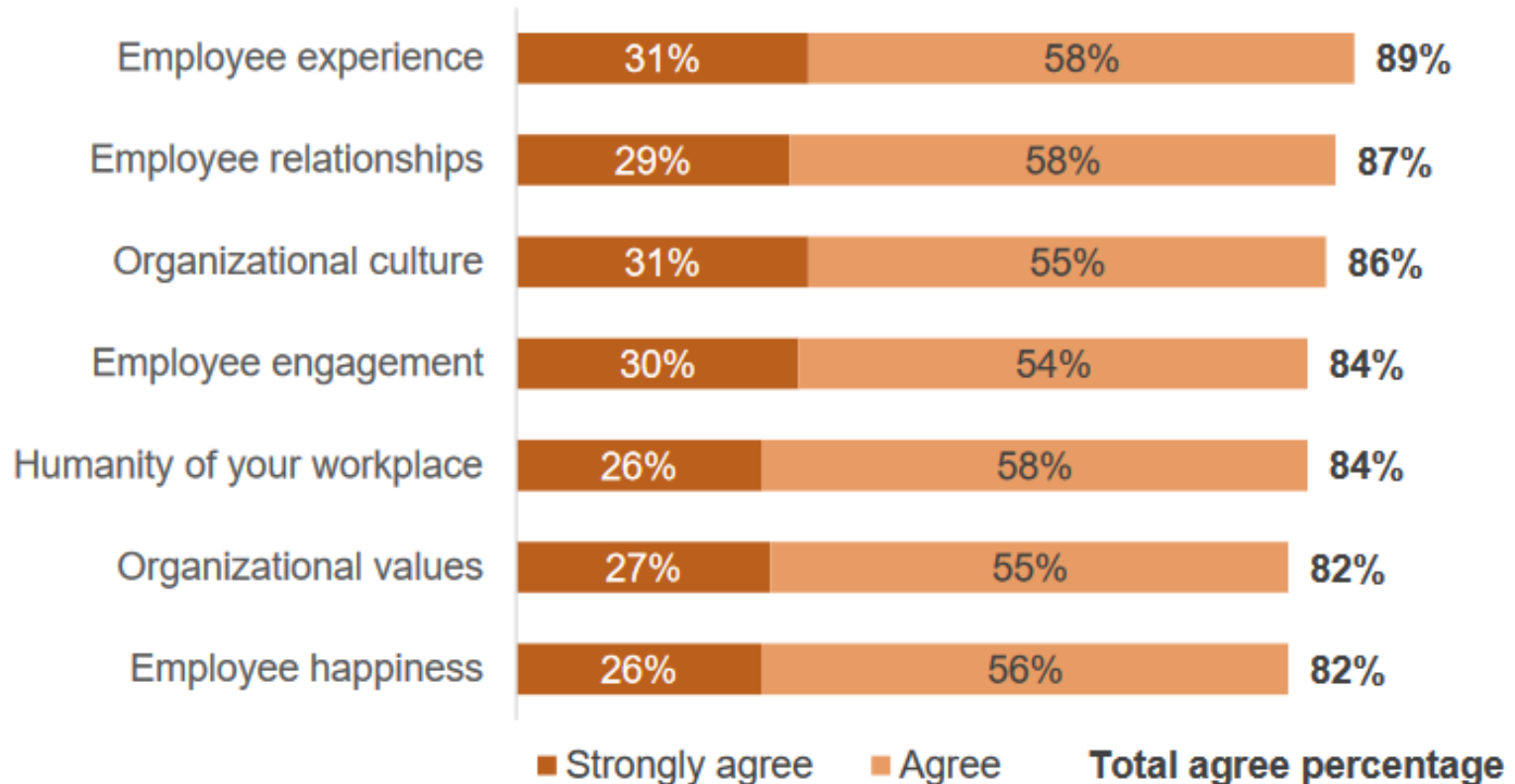
Doing it Wrong: Klout



<https://www.theverge.com/tldr/2018/5/10/17340714/klout-lithium-social-media-reputation-tool-clout>

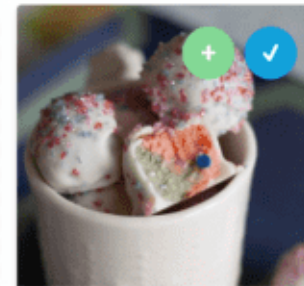
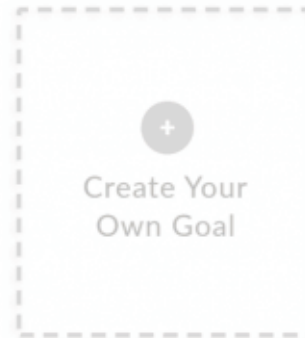
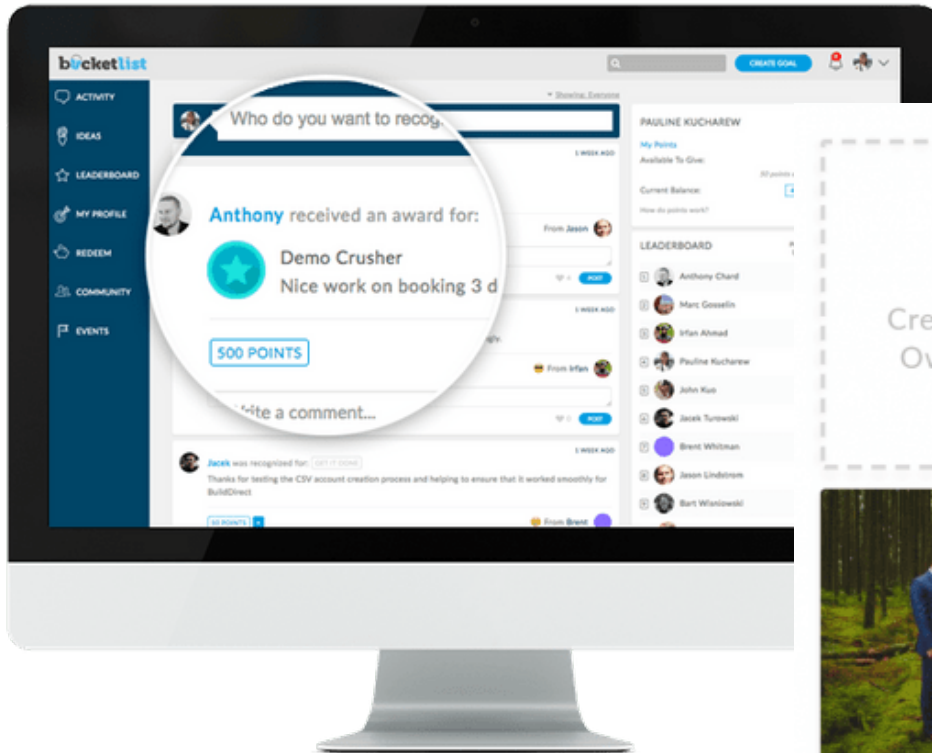
Recognition in the Workplace

Employee recognition positively affects:



<https://www.shrm.org/hr-today/trends-and-forecasting/research-and-surveys/Documents/SHRM-GloboforceEmployeeRecognition%202018.pdf>

Employee Recognition Tech



Cook something new

Based on interest: food

60 added 3 completed



Go to Lynn Canyon

Based on location: North Vancouver

60 added 3 completed



Get married

Based on interest: food

60 added 3 completed



Learn to illustrate

Based on location: North Vancouver

60 added 3 completed



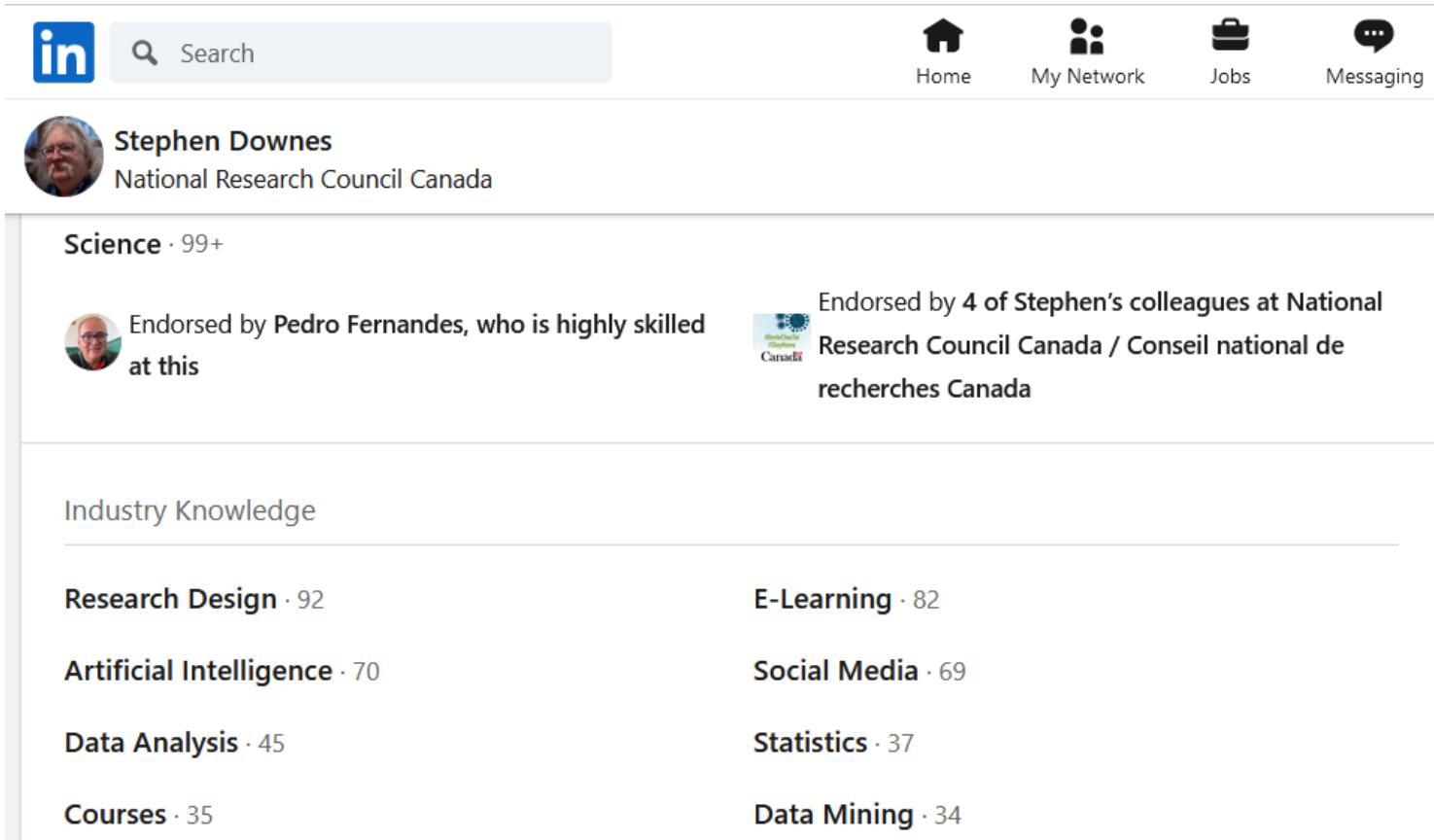
Eat pasta in Rome

Based on interest: nature

60 added 3 completed

<http://unbouncepages.com/bucketlist-employee-recognition-software/>

Social Media Recognition



The image shows a screenshot of a LinkedIn profile for Stephen Downes. At the top, there is a navigation bar with the LinkedIn logo, a search bar, and icons for Home, My Network, Jobs, and Messaging. Below the navigation bar, the profile header includes a circular profile picture of Stephen Downes, his name, and his affiliation with the National Research Council Canada. The main section of the profile is titled "Science" with 99+ endorsements. A specific endorsement is highlighted, stating "Endorsed by Pedro Fernandes, who is highly skilled at this". To the right of this endorsement is a logo for the National Research Council Canada / Conseil national de recherches Canada, with the text "Endorsed by 4 of Stephen's colleagues at National Research Council Canada / Conseil national de recherches Canada". Below the endorsement section, there is a section titled "Industry Knowledge" which lists various skills and their endorsement counts: Research Design (92), Artificial Intelligence (70), Data Analysis (45), Courses (35), E-Learning (82), Social Media (69), Statistics (37), and Data Mining (34).

Science · 99+

Endorsed by **Pedro Fernandes**, who is highly skilled at this

Endorsed by 4 of Stephen's colleagues at National Research Council Canada / Conseil national de recherches Canada

Industry Knowledge

Research Design · 92	E-Learning · 82
Artificial Intelligence · 70	Social Media · 69
Data Analysis · 45	Statistics · 37
Courses · 35	Data Mining · 34

<https://www.linkedin.com/in/stdownes/>

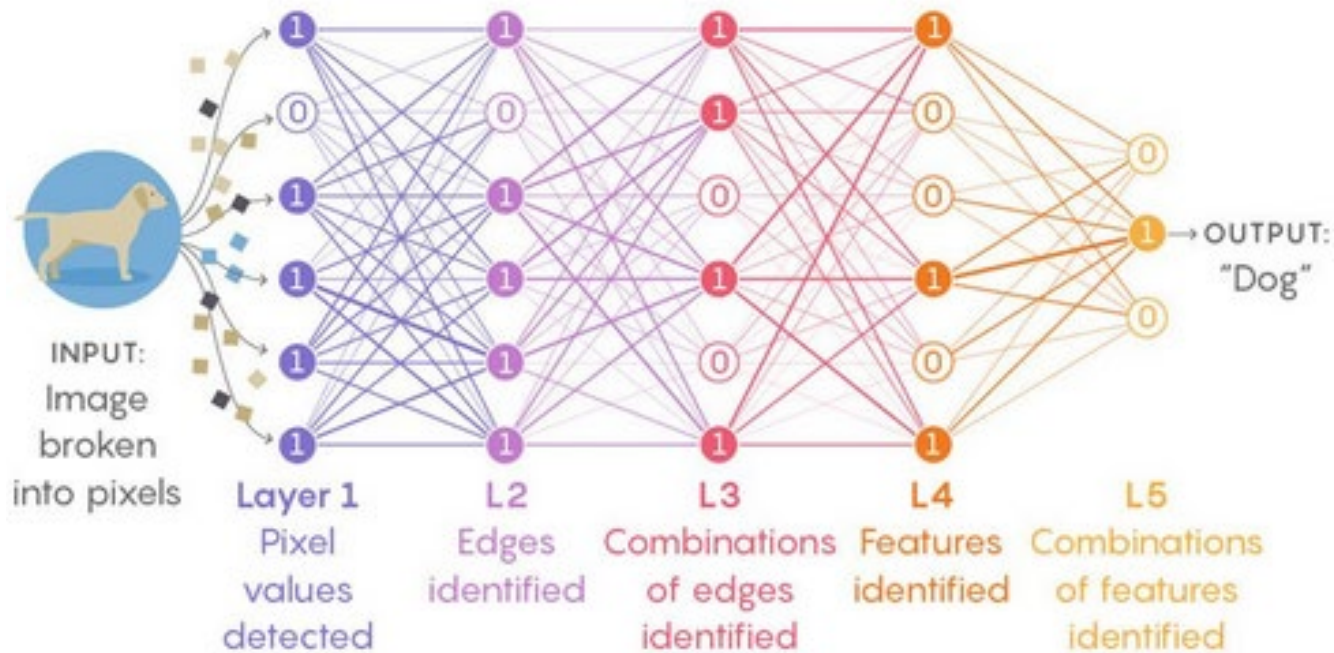
Knowing as Recognition



Seeing

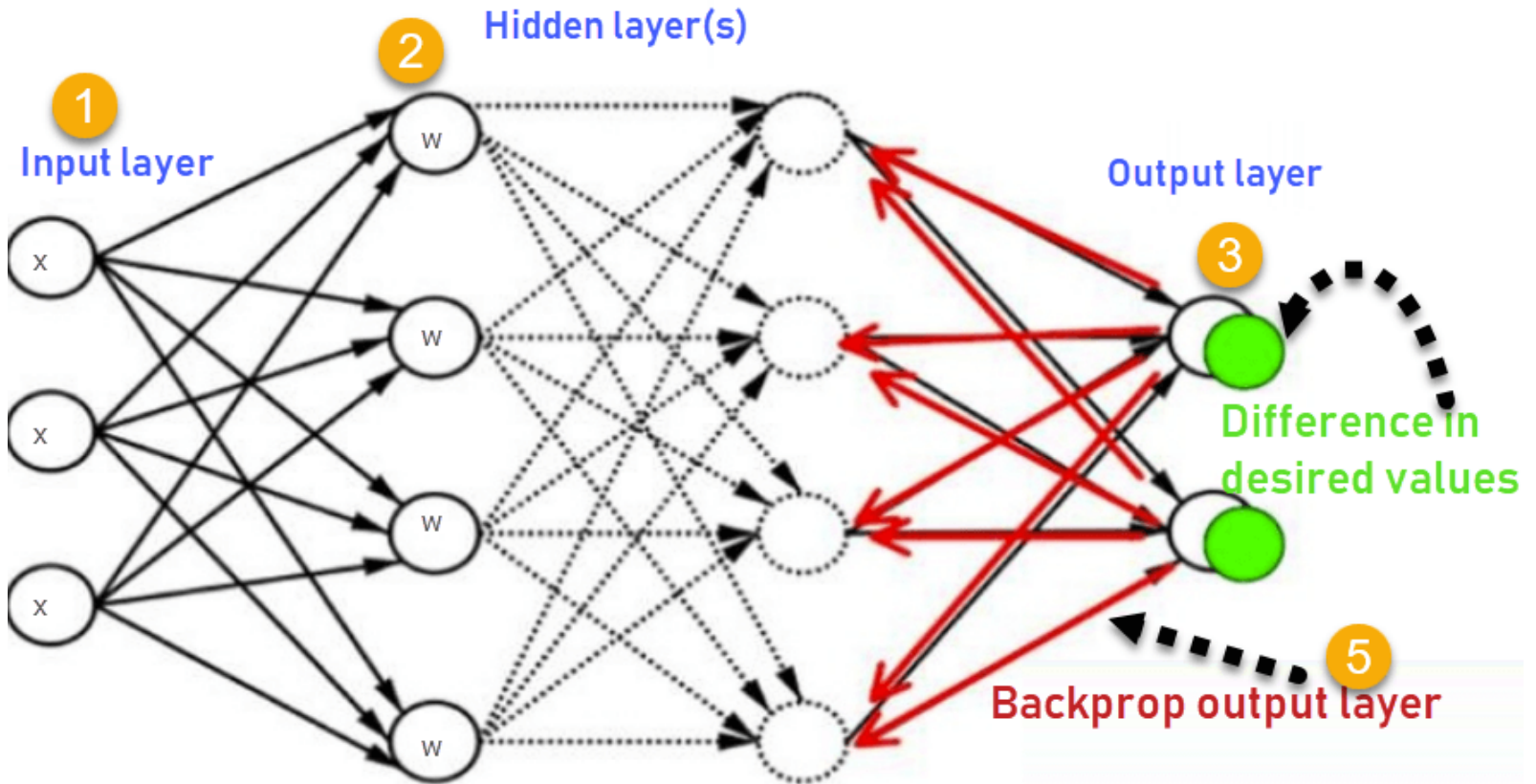


Recognition



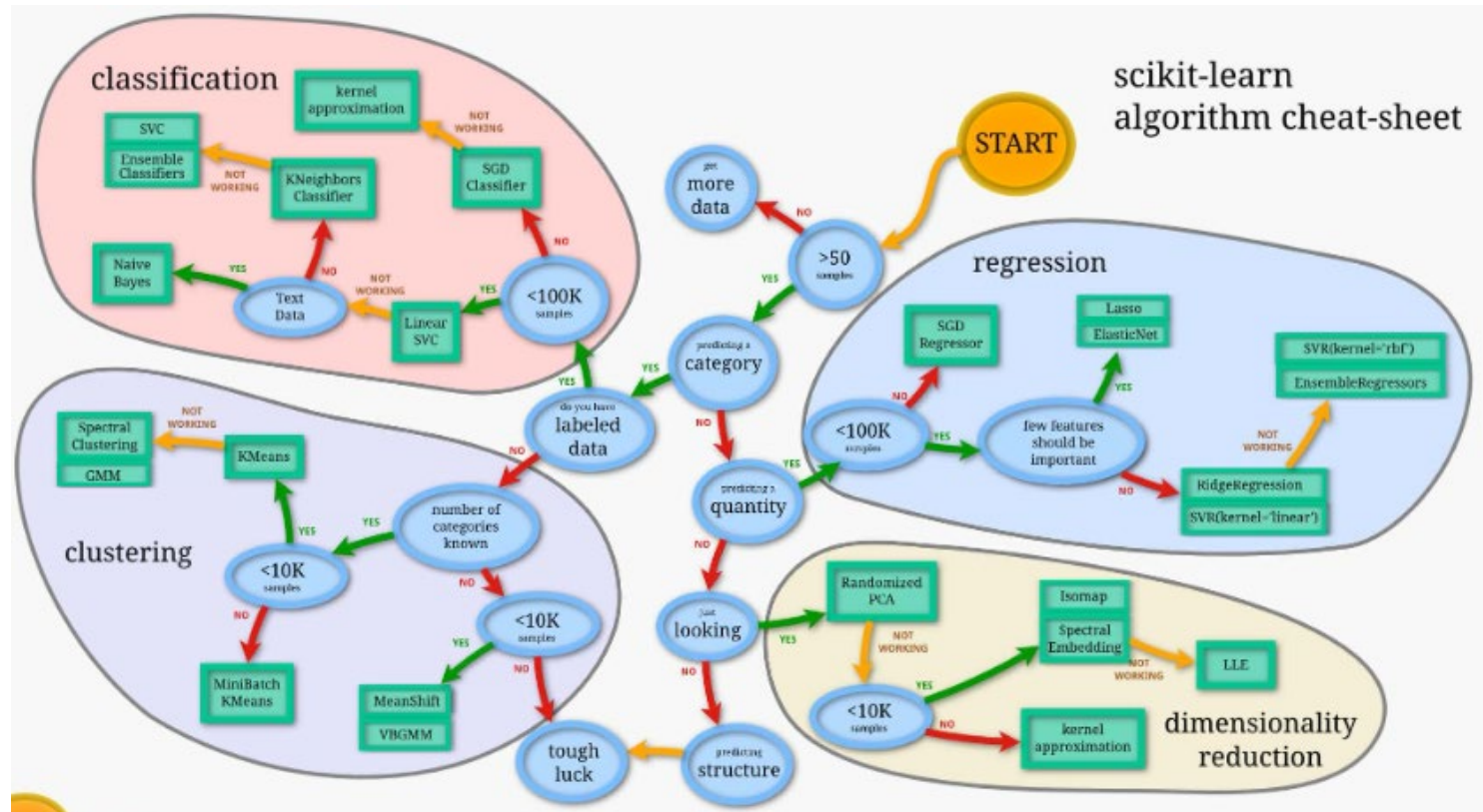
Steve Easterbrook - <https://scentroid.com/wp-content/uploads/2020/02/Steve-Easterbrook-Machine-Learning-and-Atmospheric-Modelling-A-Prognostic-View.pdf>

Learning



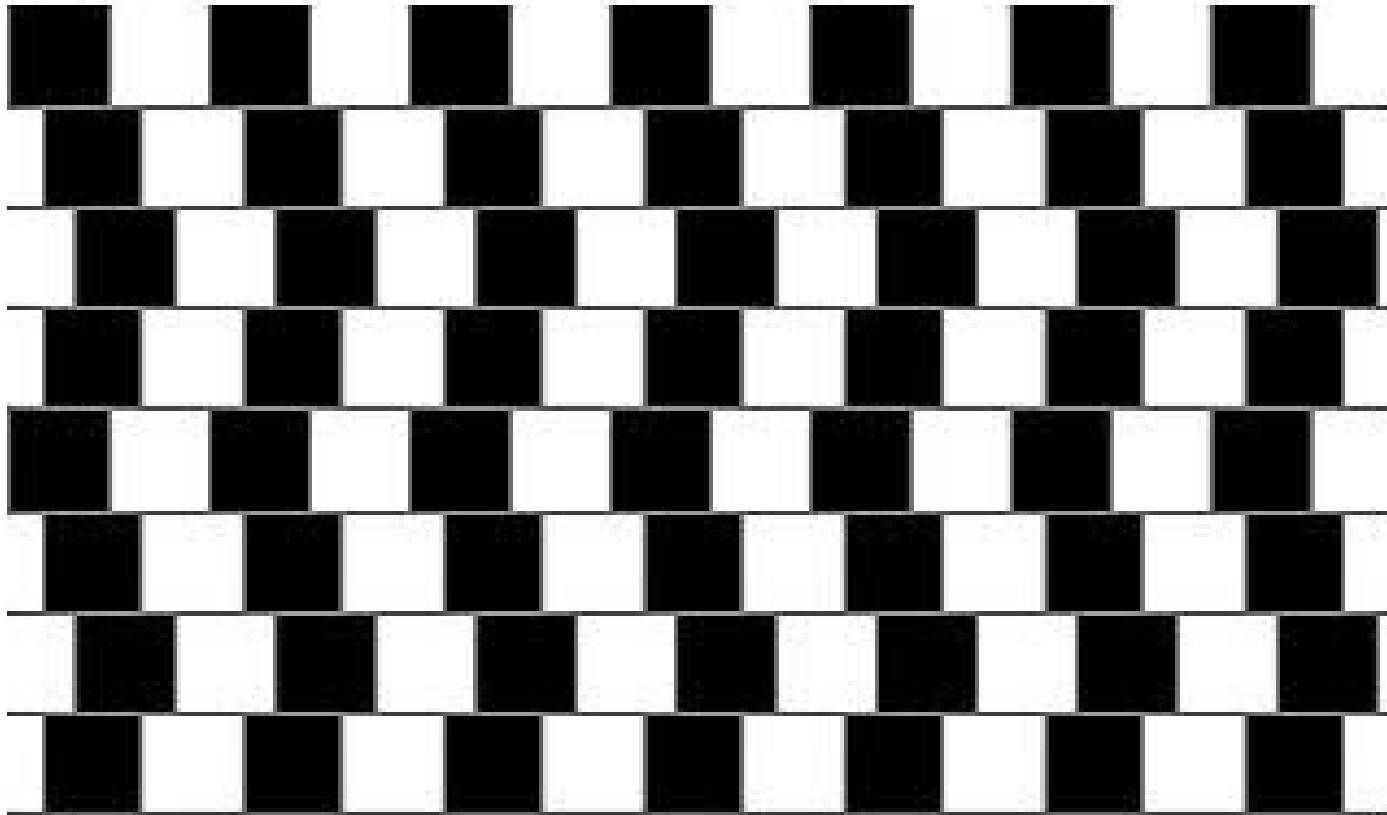
<https://www.guru99.com/backpropogation-neural-network.html>

Types of Recognition



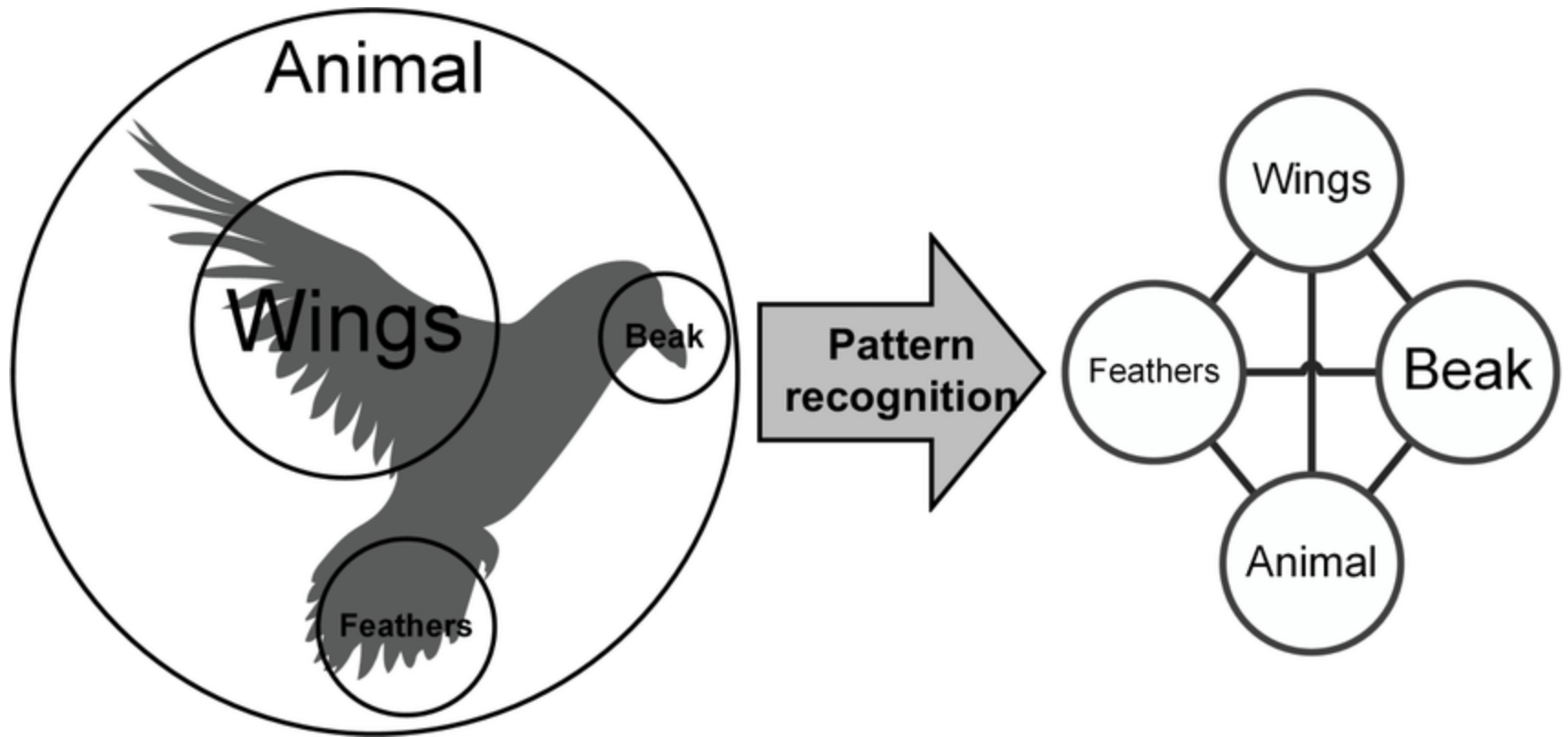
<https://www.nrel.gov/energyexecs/assets/pdfs/artificial-intelligence-and-machine-learning.pdf>

What We See



<http://www.shodor.org/interactivate1.0/discussions/tessillusion.html>

AI-based evaluation



Ballet

Number of sensors (number of possible sensor combinations)	Level 1			Level 2			Level 3		
	Accuracy score mean (range)	Best	Worst	Accuracy score mean (range)	Best	Worst	Accuracy score mean (range)	Best	Worst
5 (6)	98.2% (98–98.5%)	L shin L thigh R shin R thigh Sacrum	L thigh L shin R thigh Sacrum Thoracic	81.8% (81.3–81.8%)	L shin L thigh R shin R thigh Sacrum	L shin L thigh R thigh Sacrum Thoracic	74.9% (74.1–76.3%)	L shin L thigh R shin R thigh Sacrum	L shin L thigh R thigh Sacrum Thoracic
4 (15)	98.1% (97.8–98.4%)	L shin L thigh R shin R thigh	L thigh R shin R thigh Sacrum	81.3% (79.3–82.4%)	L shin R shin R thigh Sacrum	L shin L thigh Sacrum Thoracic	73.8% (71.8–75.1%)	L shin R shin R thigh Sacrum	R shin R thigh Sacrum Thoracic
3 (20)	98% (97.6–98.2%)	L shin R thigh Sacrum	R shin Sacrum Thoracic	79.5% (73.7–81.7%)	L shin R shin Sacrum	L shin L thigh Thoracic	72.0% (65.2–74.5%)	L shin R thigh Sacrum	L shin L thigh Thoracic
2 (15)	97.7% (97.2–98.1%)	L shin R thigh	Sacrum Thoracic	75.8% (69.7–80.2%)	L shin R thigh	L shin L thigh	68.0% (61.5–72.5%)	L shin R thigh	L shin Thoracic
1 (6)	97.3% (97–97.7%)	R thigh	R shin	67.1% (60.2–76.5%)	Sacrum	Thoracic	56.5% (38.0–65.3%)	Sacrum	Thoracic

Surgery

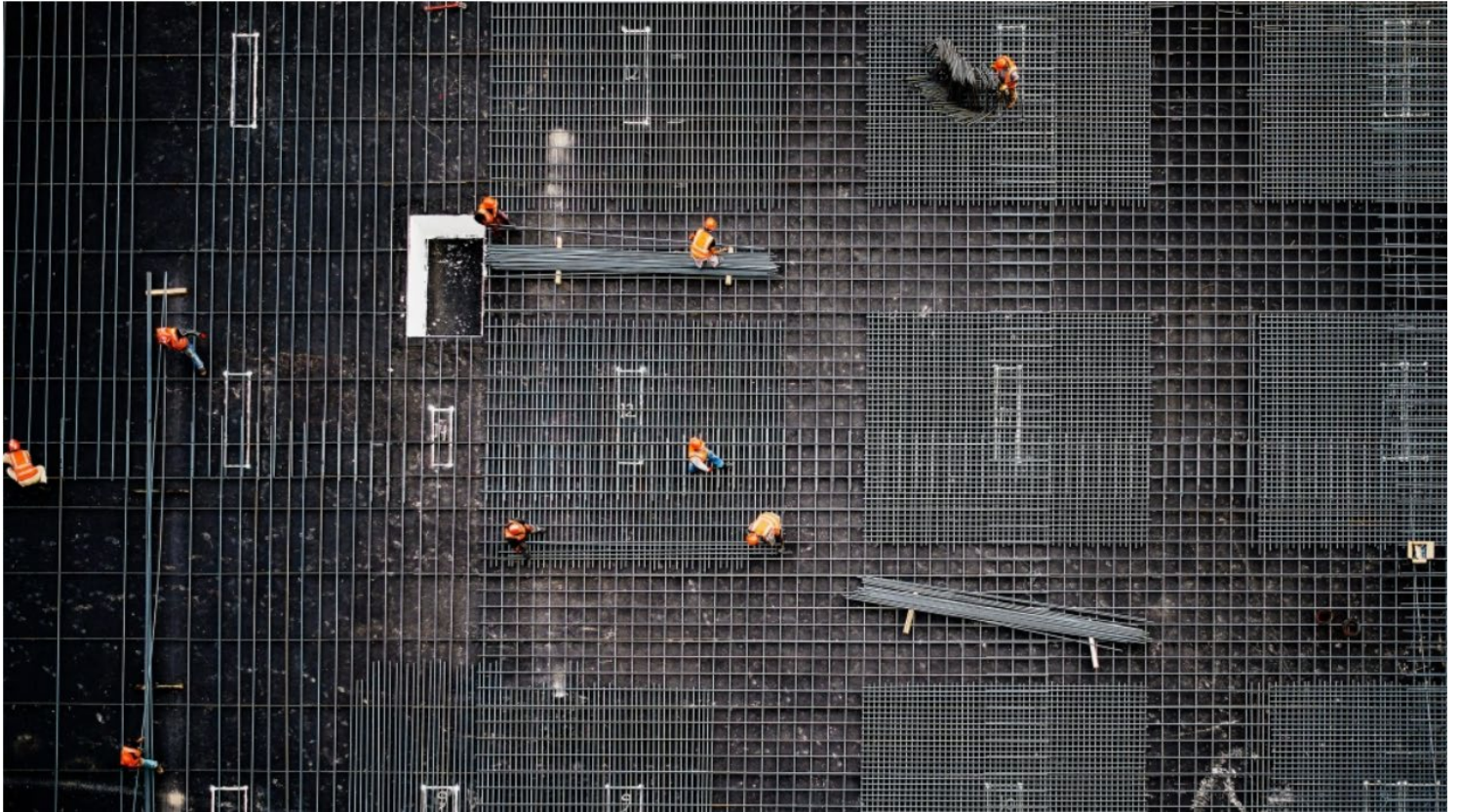


Bad, Okay and Good Subcuticular Sutures On A Suture Pad

Using AWS Rekognition To Automatically Grade Surgical Residents

https://www.reddit.com/r/MachineLearning/comments/jgx2yy/d_using_aws_rekognition_to_automatically_grade/

Construction



Buildots <https://www.technologyreview.com/2020/10/16/1010617/ai-image-recognition-construction-computer-vision-costs-delays/>

How Normal Are You?

The screenshot shows a web browser window with the URL <https://www.hownormalami.eu>. On the left, a video call is in progress with a participant named 'Mr. Sexypants55'. The video shows a man with a beard and glasses wearing a blue t-shirt. Below the video is a blurred cityscape background. On the right, the website's interface displays health metrics:

Gender	Man	Man (56%)	Yes
BMI	22.8	19.3-25.3	Yes

Below the table, the 'Life expectancy' section shows:

CA	22.8	Man	65
----	------	-----	----

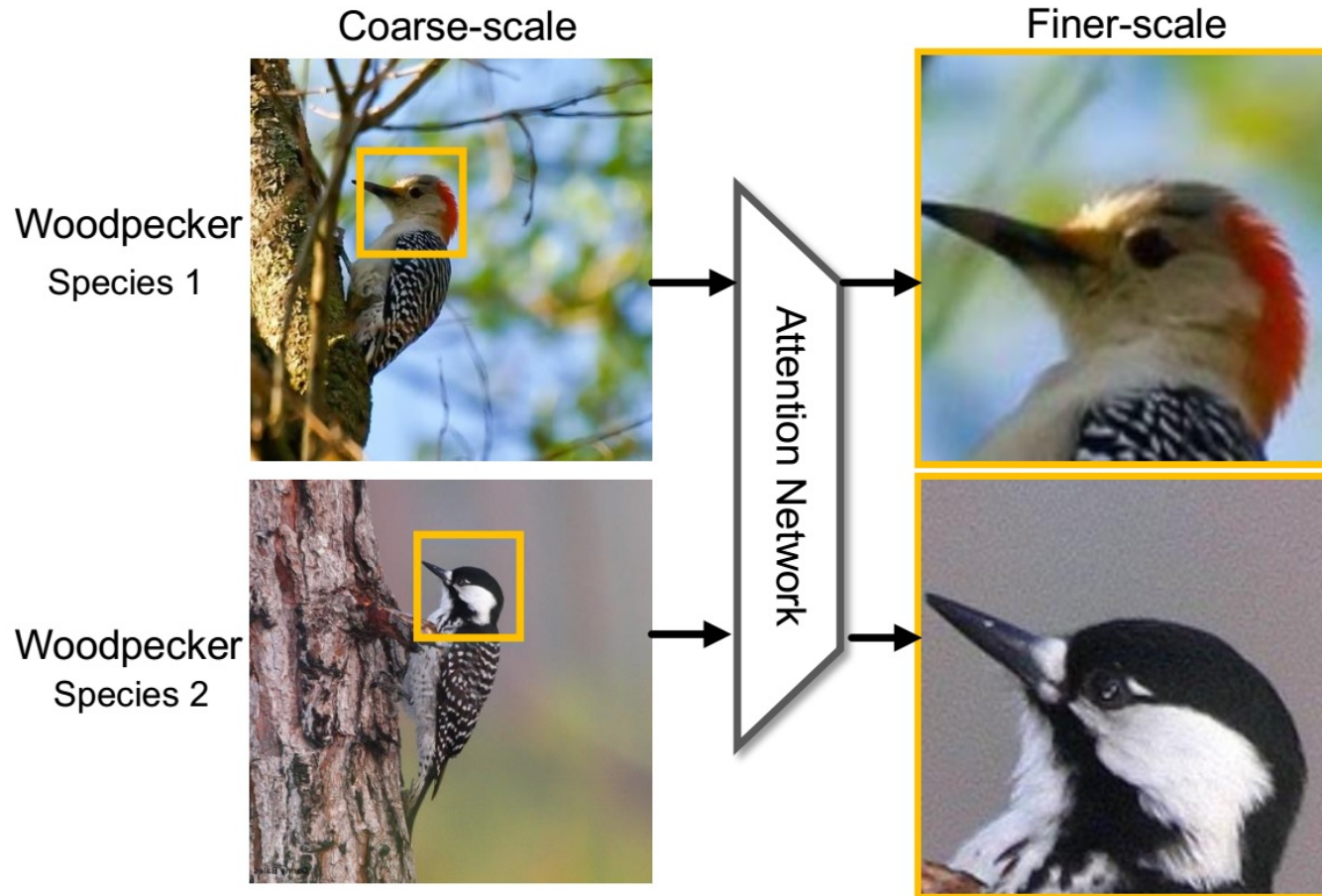
84

You have 19 years left to live.

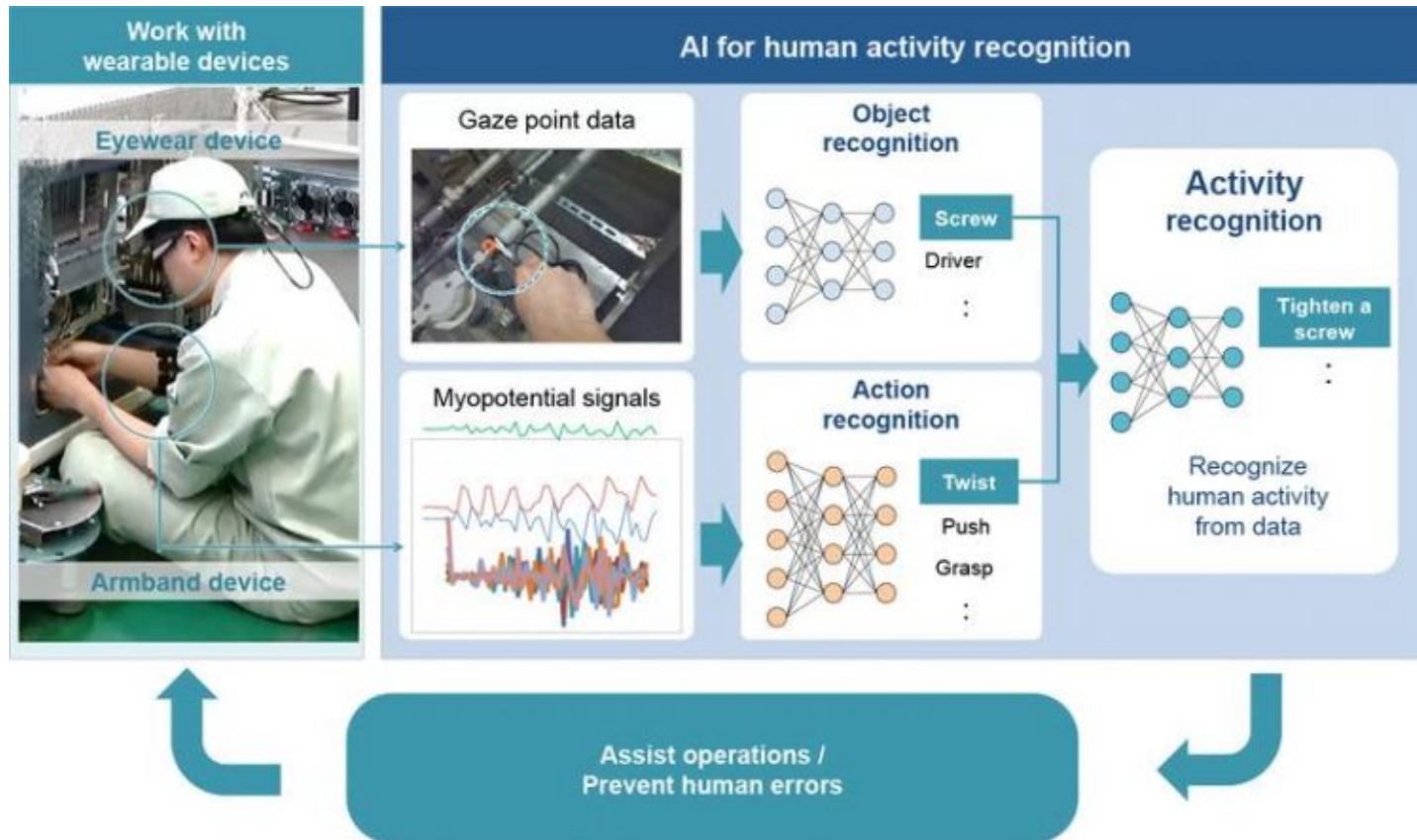
A small European Union flag is visible in the bottom right corner of the website interface.

Tijmen Schep <https://www.hownormalami.eu/>

Recognition Networks

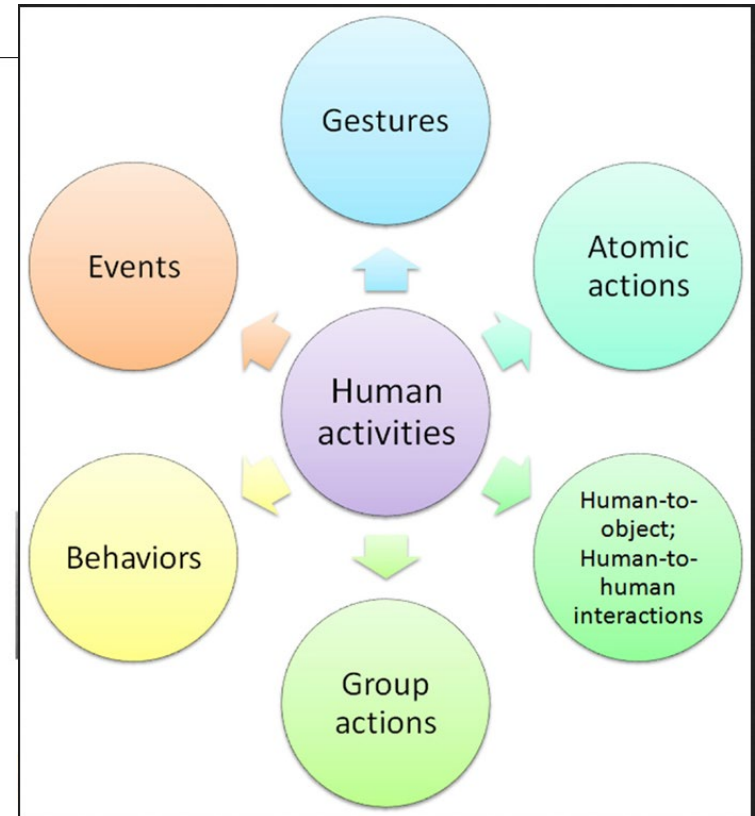
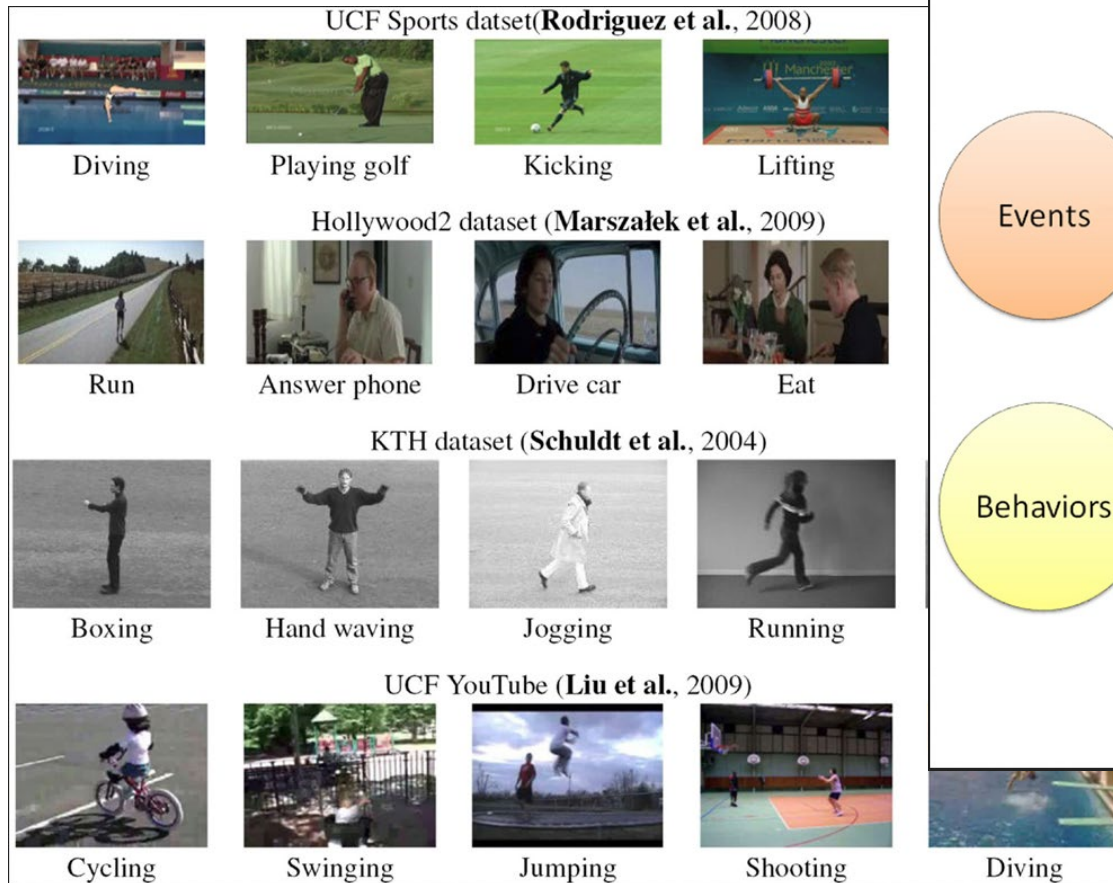


Activity Recognition

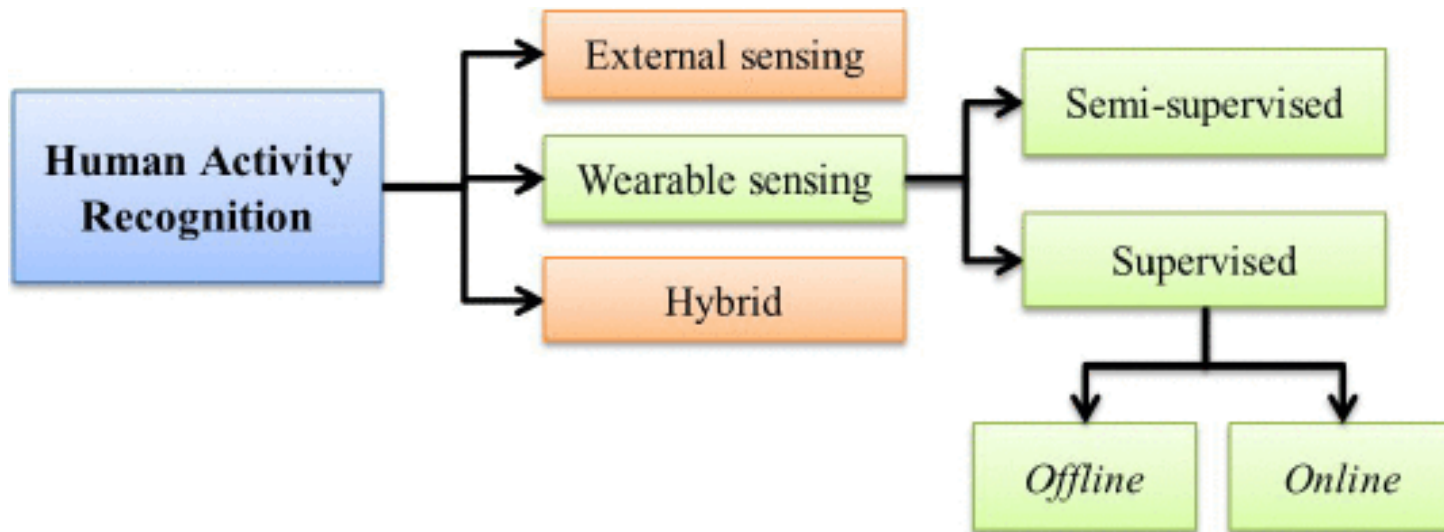
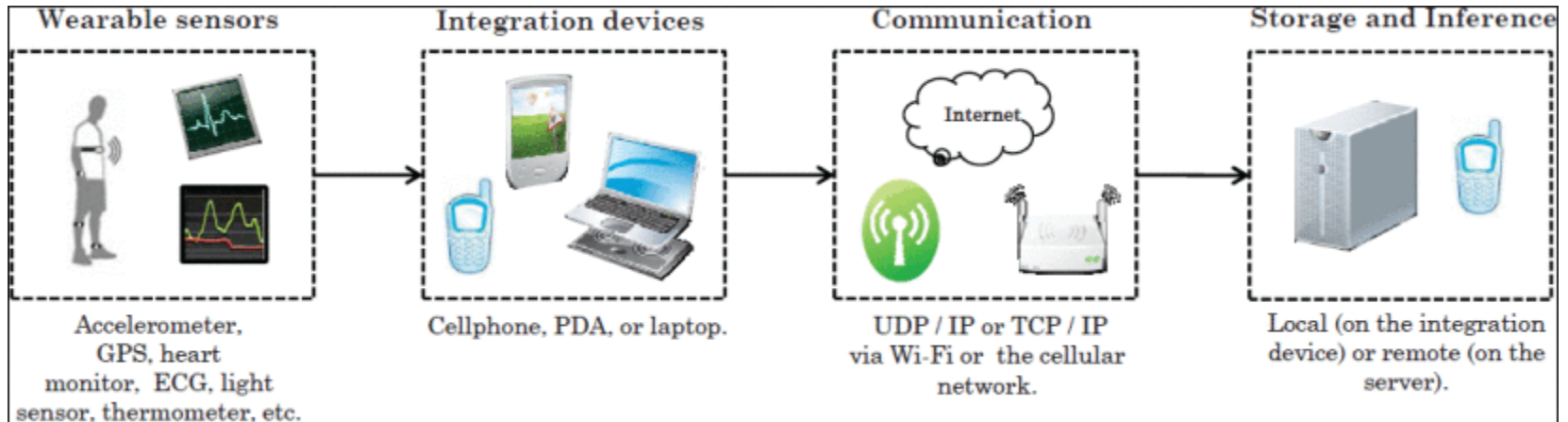


<https://www.innovations-report.com/information-technology/dfki-and-hitachi-jointly-develop-ai-technology-for-human-activity-recognition-of-workers/>
<https://ieeexplore.ieee.org/abstract/document/5370804>

Methods



Common Technologies



Applications

Tools

Focus on platforms/mechanisms that promise rapid and efficient deployment of resources, talent, and skillsets when and as needed.

- **Newer initiatives:**
 - Talent Cloud
 - Career Marketplace
 - Micro Missions
- **Existing initiatives:**
 - Interchange

Gig

Focus on dispatching high-demand skills or talent for specific amounts of time.

- **Newer initiatives:**
 - Free Agents
 - IIU Fellowship Program
 - TBS Surge Team

Development

Focus on development of resources over time with a specific end-goal in mind (e.g. future policy leader or procurement officer).

- **Newer initiatives:**
 - GC Entrepreneurs
 - Policy Community Mobility Program
- **Existing initiatives:**
 - Advanced Policy Analysts Program
 - Recruitment of Policy Leaders

Foundational - New Directions in Staffing

Laura Portal Avelar GC_Innovations <https://medium.com/gc-entrepreneur/innovative-staffing-eb541920e18a>

Technical Challenges

The activity	Meaning
Recognising parallel activities	Doing more than one activity at the same time, e.g. watching TV and talking to a friend.
Recognising overlapped activities	Activities overlapped to each other, e.g. while a person is cooking in the kitchen and the phone rings he/she will stop cooking for a while until he/she finishes the call.
Vagueness in activities interpretation	Interpret similar activities in different ways. For example, opening refrigerator door may be considered as a cooking or cleaning operation.
Multiple occupants	The place occupied by more than a single person.



Challenges in Human Activity Recognition

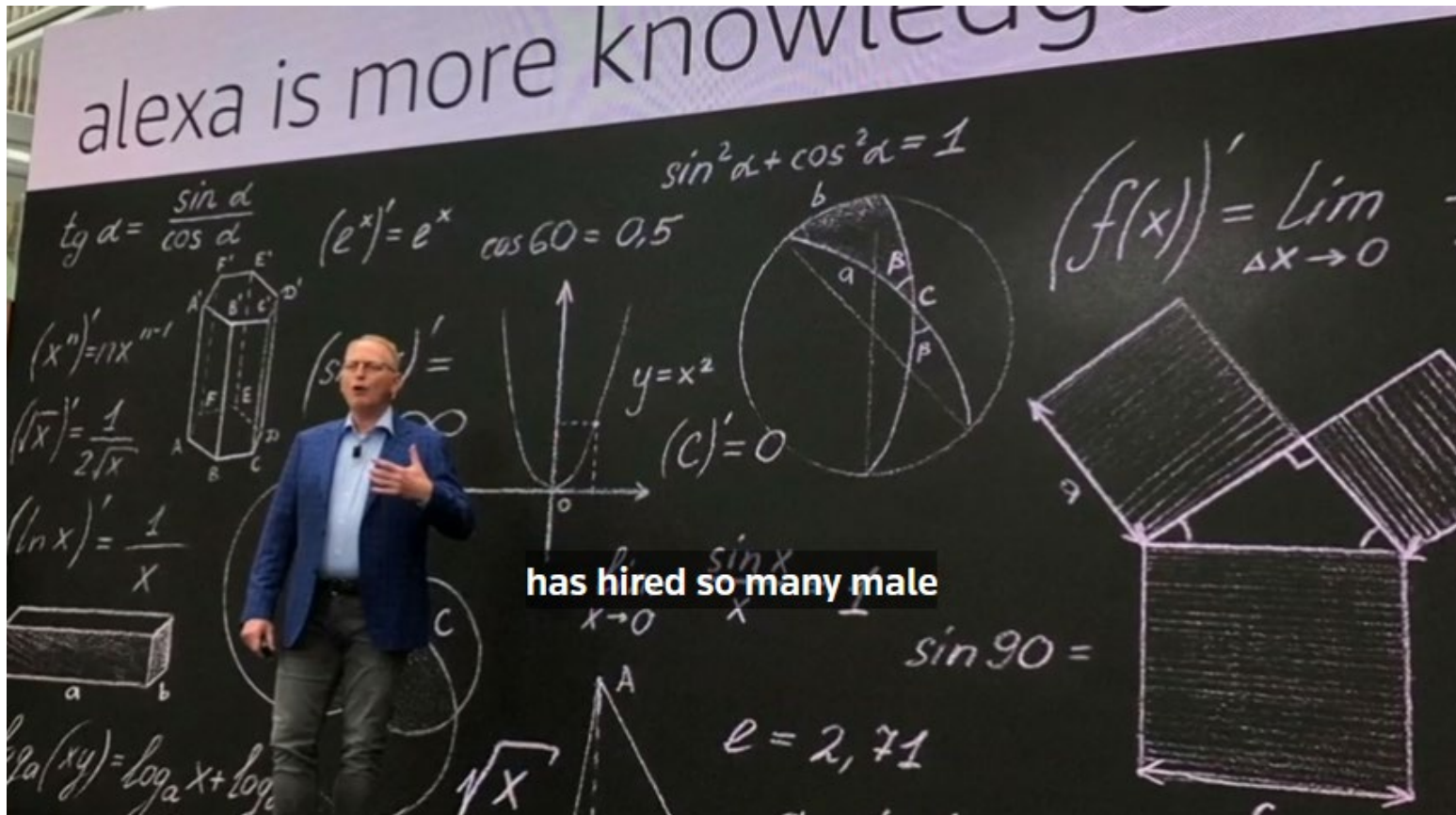


Invisibility



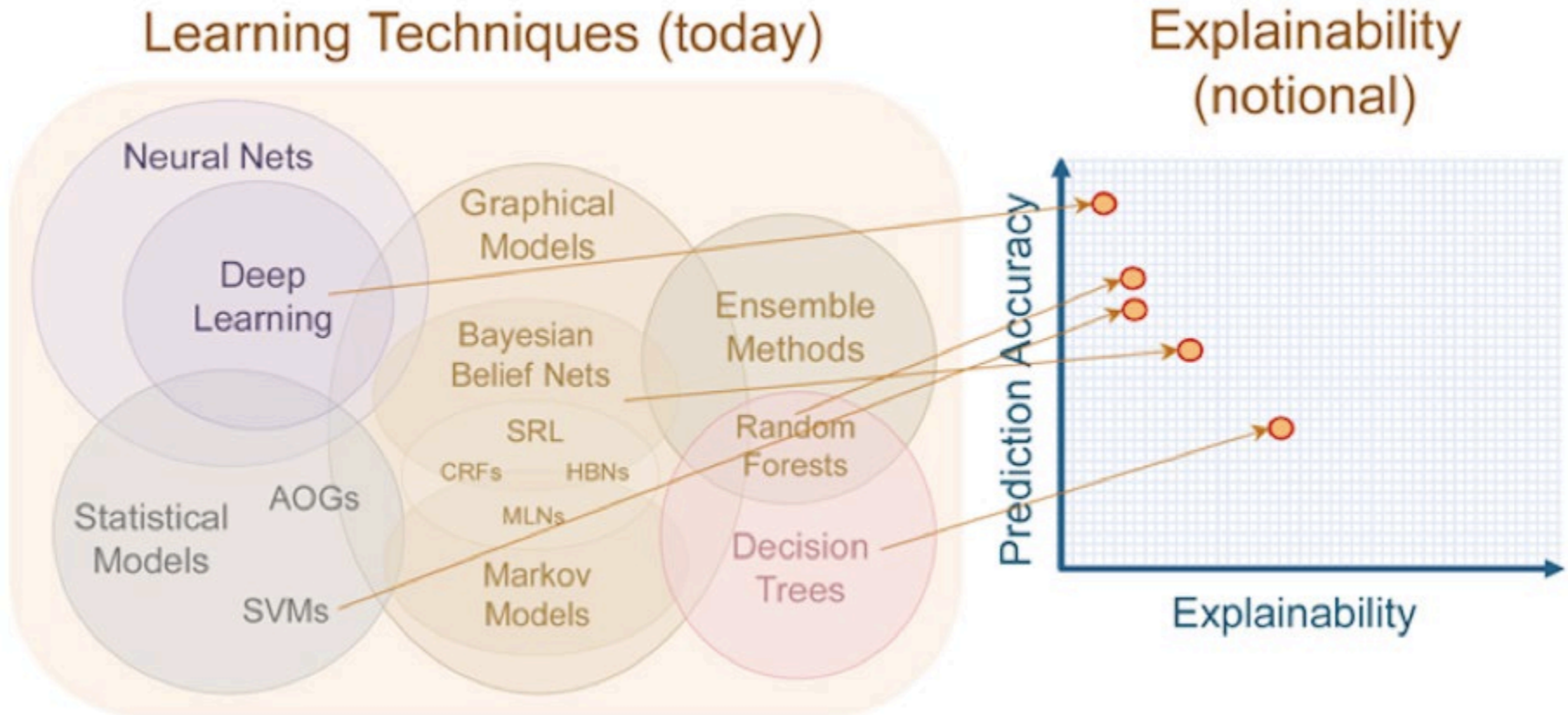
<https://schoolsweek.co.uk/making-the-vulnerable-visible-is-how-we-will-close-gaps/>

Bias



<https://fortune.com/2018/10/10/amazon-ai-recruitment-bias-women-sexist/>

Explainability, Interpretability



<https://iapp.org/news/a/the-privacy-pros-guide-to-explainability-in-machine-learning/>

Surveillance Culture



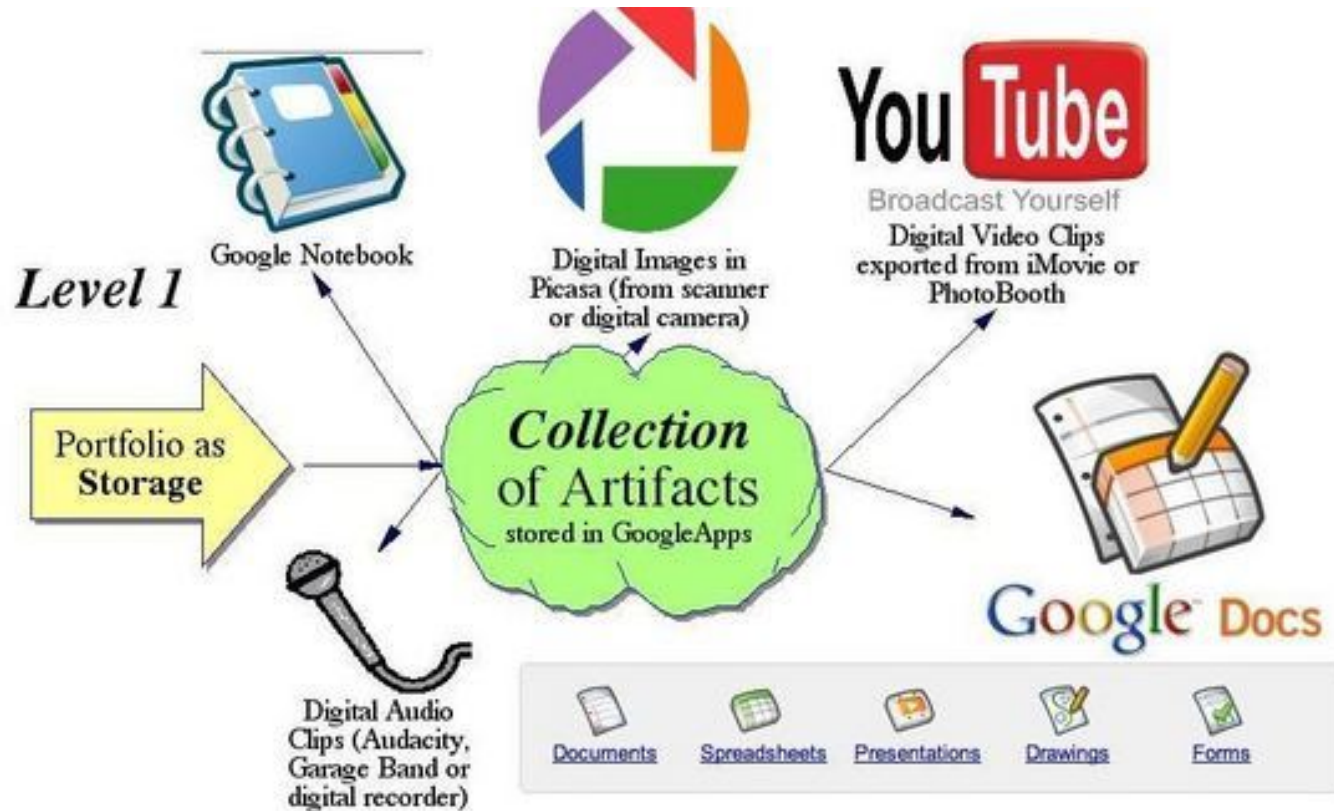
David Lyon

<https://ijoc.org/index.php/ijoc/article/download/5527/1933&usg=AOvVaw1wQCFgARRSAPM6HjEK4lLv>

Open Recognition Networks



e-Portfolios



<https://www.informationweek.com/software/7-ways-to-create-e-portfolios/d/d-id/1110673>
<https://electronicportfolios.org/balance/Balancing2.htm>

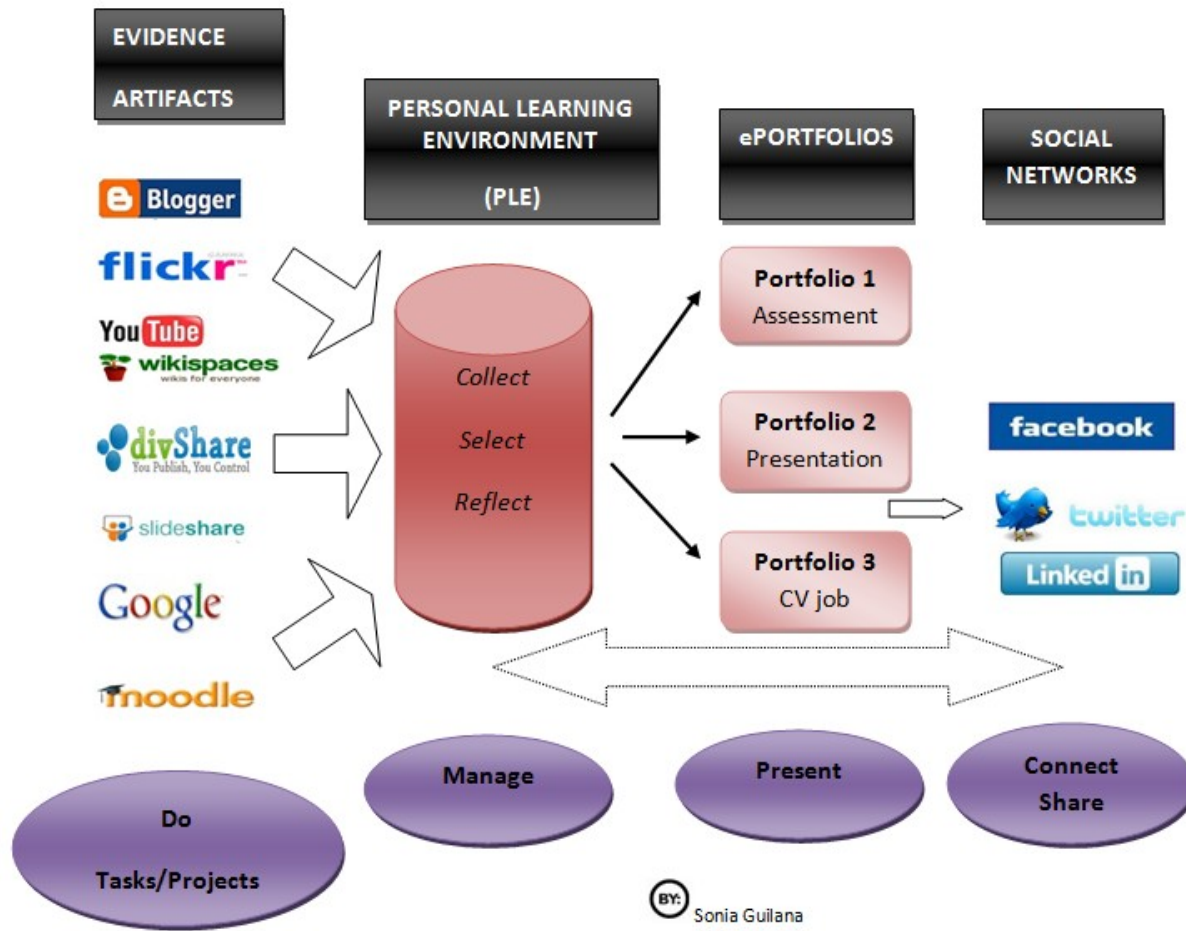
Activity Records



<https://xapi.com/overview/>

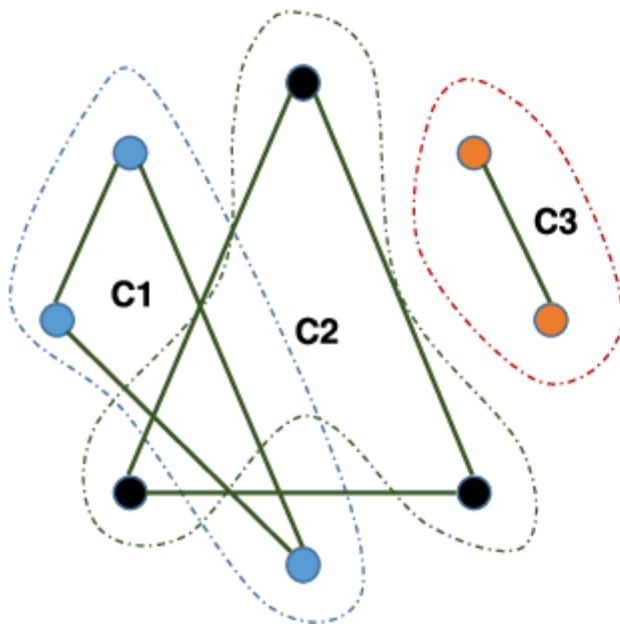
<https://xapi.com/learning-record-store/>

Ownership and Choice

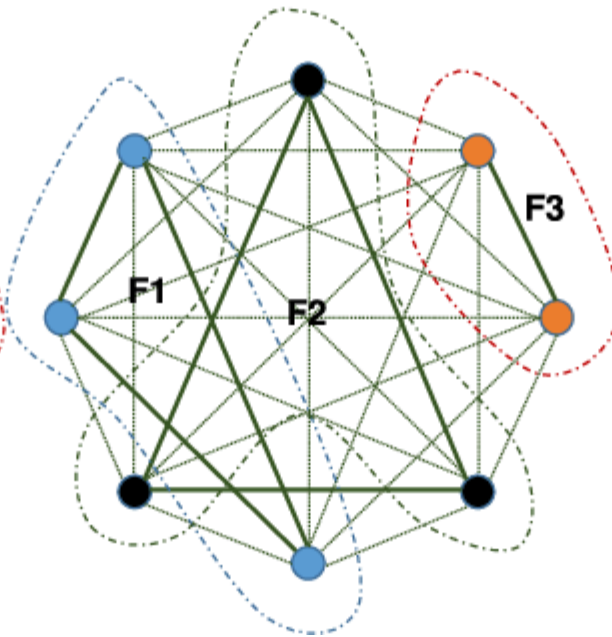


Platforms

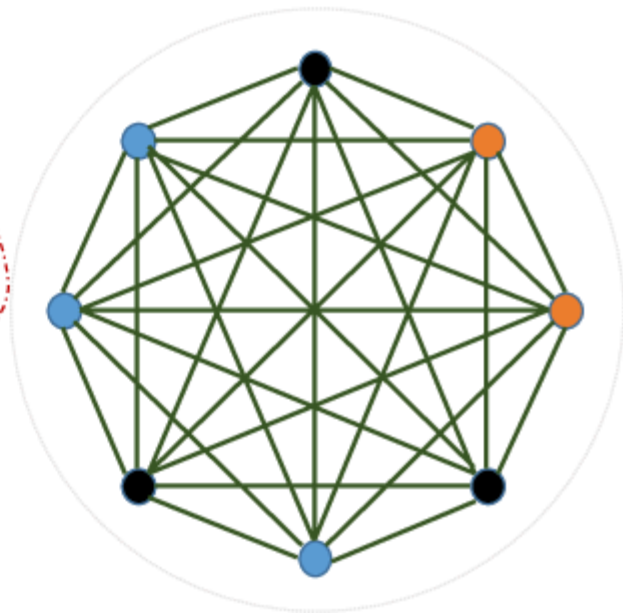
(a) Independent



(b) Federated

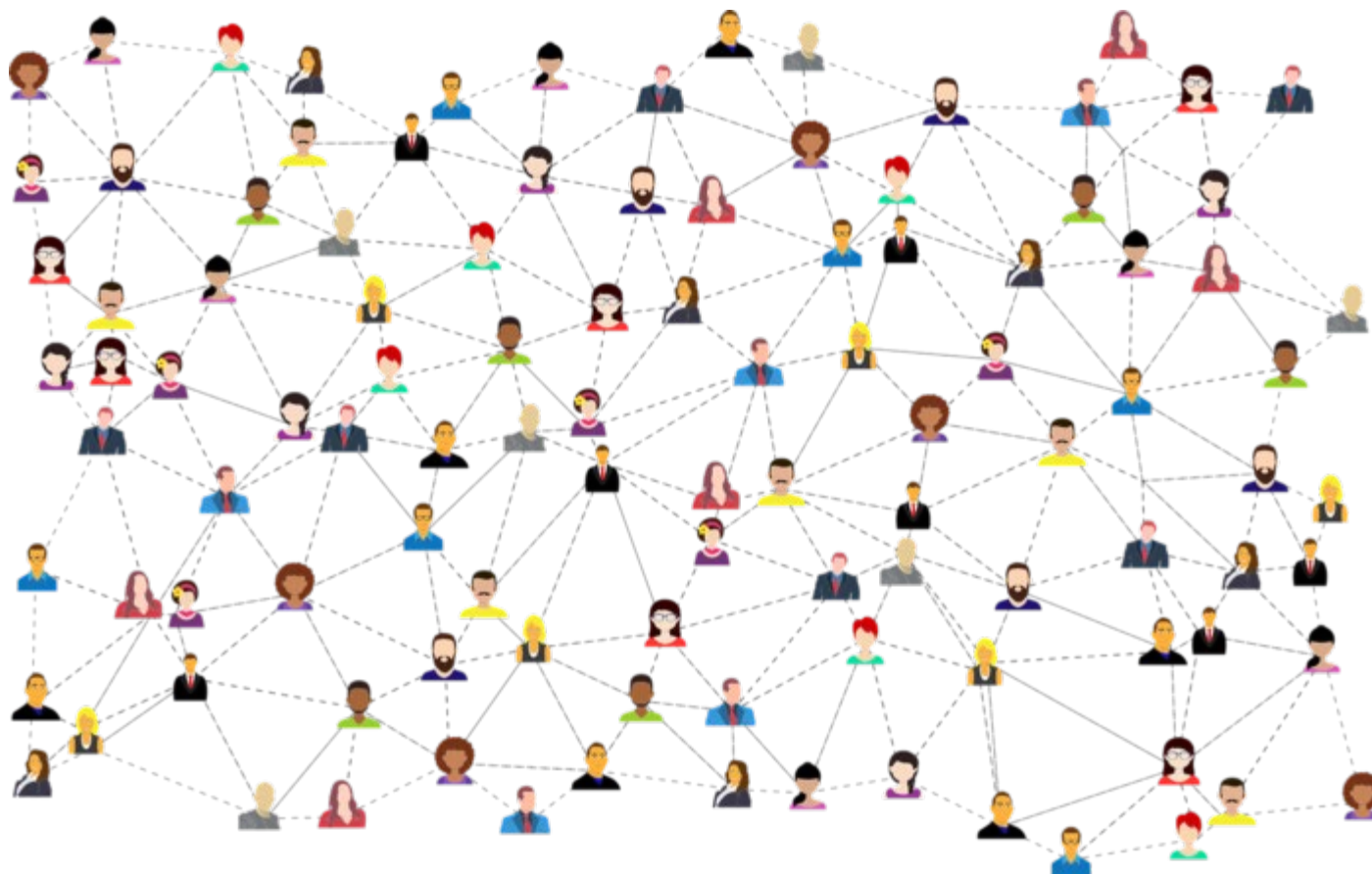


(c) Centralized



Federated Networks - https://monoskop.org/Federated_networks

Challenges



Thank You



<https://www.downes.ca>