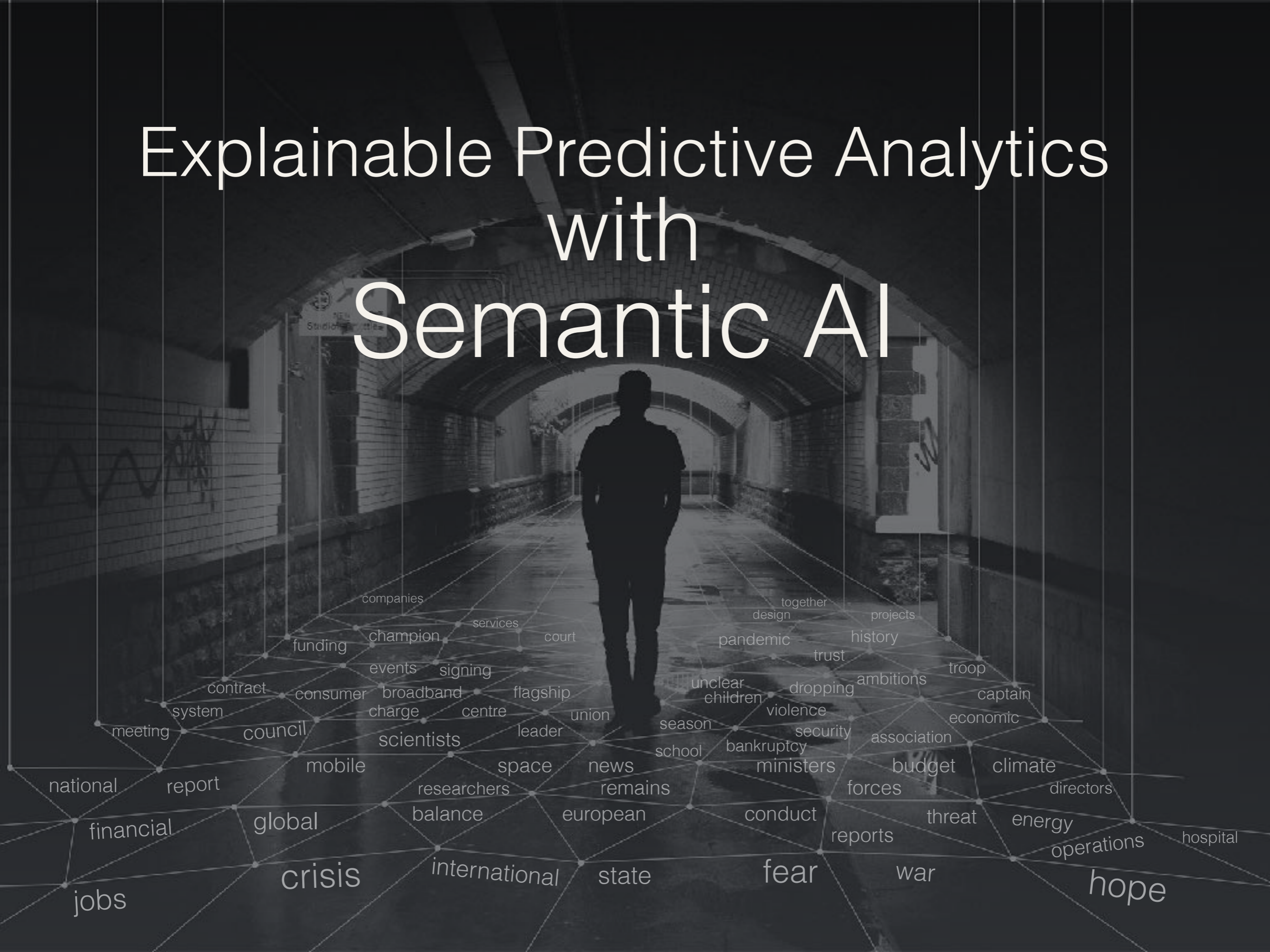


Explainable Predictive Analytics with Semantic AI



companies
services
court
together
design
projects
history
troop
captain
economic
ambitions
dropping
violence
security
association
budget
climate
directors
energy
operations
hospital
pandemic
trust
unclear
children
bankruptcy
ministers
conduct
reports
war
fear
hope
news
remains
european
state
international
balance
researchers
international
state
fear
war
hope
national
report
financial
global
crisis
international
state
fear
war
hope
meeting
contract
consumer
council
mobile
report
financial
global
crisis
international
state
fear
war
hope
funding
champion
events
signing
broadband
charge
centre
leader
union
season
school
news
remains
european
state
fear
war
hope
contract
consumer
council
mobile
report
financial
global
crisis
international
state
fear
war
hope
contract
consumer
council
mobile
report
financial
global
crisis
international
state
fear
war
hope

Global need for upskilling

A world map is shown in a light gray color against a dark background. Overlaid on the map is the text "FIVE BILLION" in large, bold, red, hand-drawn style letters. The text is centered horizontally and spans across the middle of the map.

**FIVE
BILLION**

because AI will affect everyone

Explainable Predictive Analytics with Semantic AI

Basic unit: one micro skill



Addition



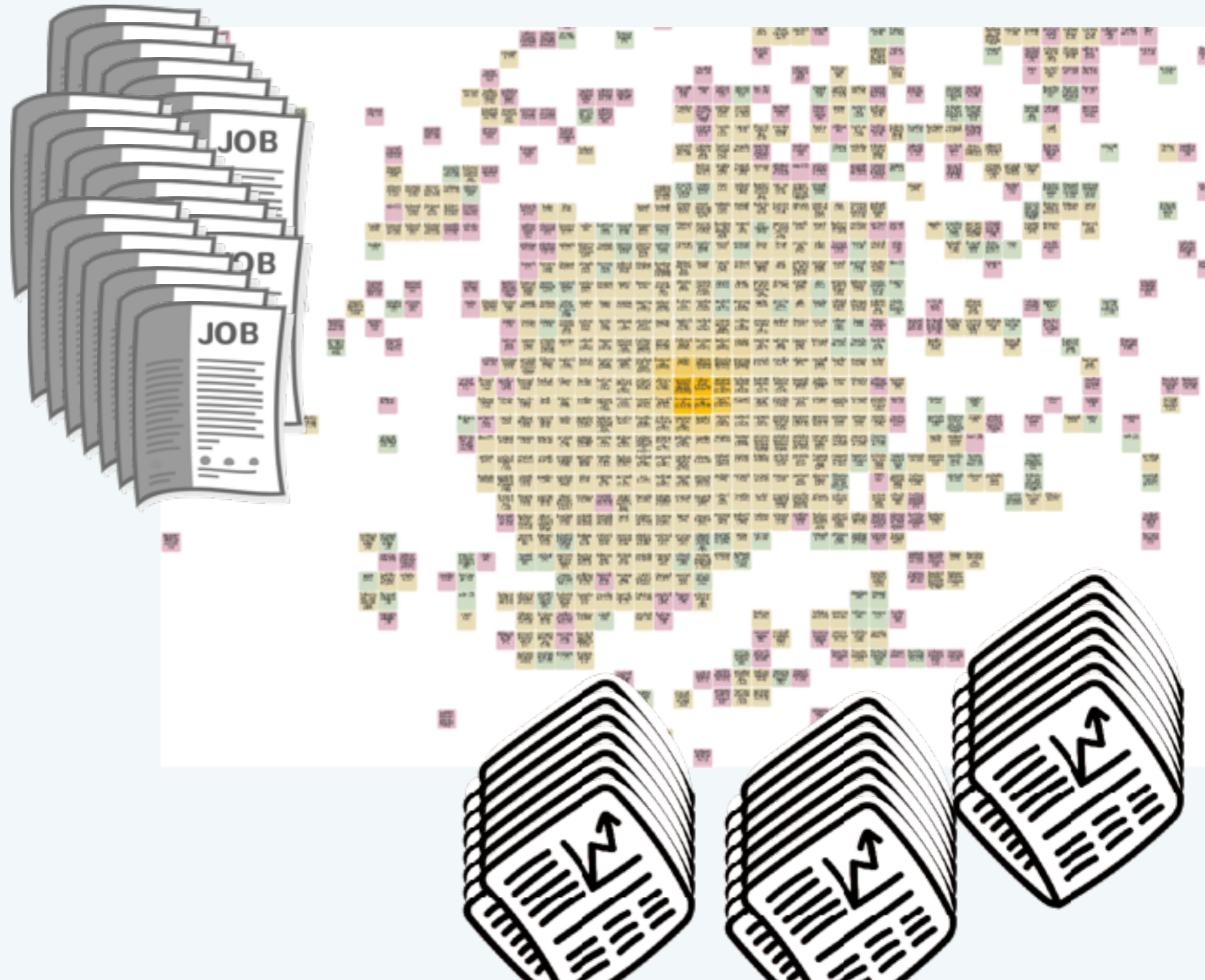
Labour Market Analytics

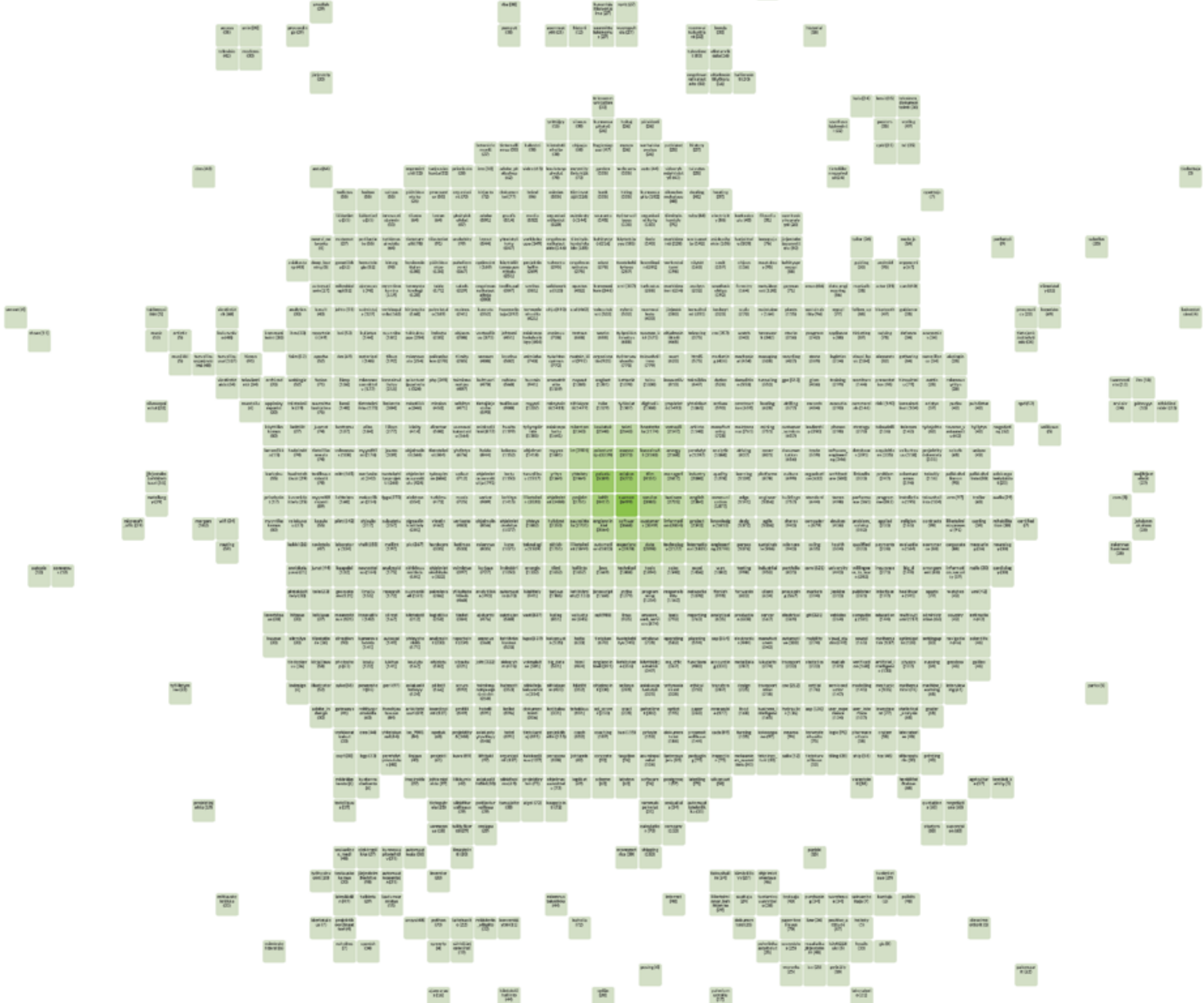
Explainable Predictive Analytics with Semantic AI

Headai **Digital_Twin on labour markets** is an extremely granular and detailed cognitive model on global labour markets dynamics.

It keeps itself up-to-date by reading through 10 000 000 job openings, 1 000 000 economic news and 100 000 investment announcements all over the world.

It knows what skills are needed, in what location, in what domain. Now and in the near future.





TOP 10 job titles of 2019, 2018, 2017, 2016 and 2015

TOP 20 JOBS		2019 (est)	2018	2017	2016	2015
officer	↓	7.252	7.450	8.191	7.852	7.389
manager	↓	4.454	4.964	5.360	8.325	5.796
assistant	↓	4.034	4.901	7.157	4.621	5.889
worker	↑	2.899	2.378	1.753	2.034	1.574
provider	▬	2.336	2.577	2.899	2.537	1.833
researcher	▬	2.294	2.559	2.393	2.182	2.574
reporter	↑	2.185	1.649	1.865	1.734	1.685
accountant	▬	1.891	0.865	2.258	2.034	3.130
clerk	↑	1.471	1.009	1.326	0.768	1.315
director	▬	1.345	1.261	0.910	1.369	1.213
programmer	▬	1.345	1.495	1.258	1.611	1.556
marketer	▬	1.303	1.360	1.124	1.660	1.361
developer	↑	1.092	0.946	0.674	1.044	0.657
chief	↑	0.950	0.910	0.719	0.601	0.630
designer	▬	0.840	0.739	0.483	0.507	1.028
cashier	↑	0.630	0.378	0.191	0.222	0.389
offerer	↓	0.588	0.910	0.899	0.936	0.611
deliverer	▬	0.571	0.685	0.742	0.596	0.417
trainer	▬	0.571	0.568	0.618	0.473	0.667
secretary	▬	0.445	0.441	0.438	0.369	0.574

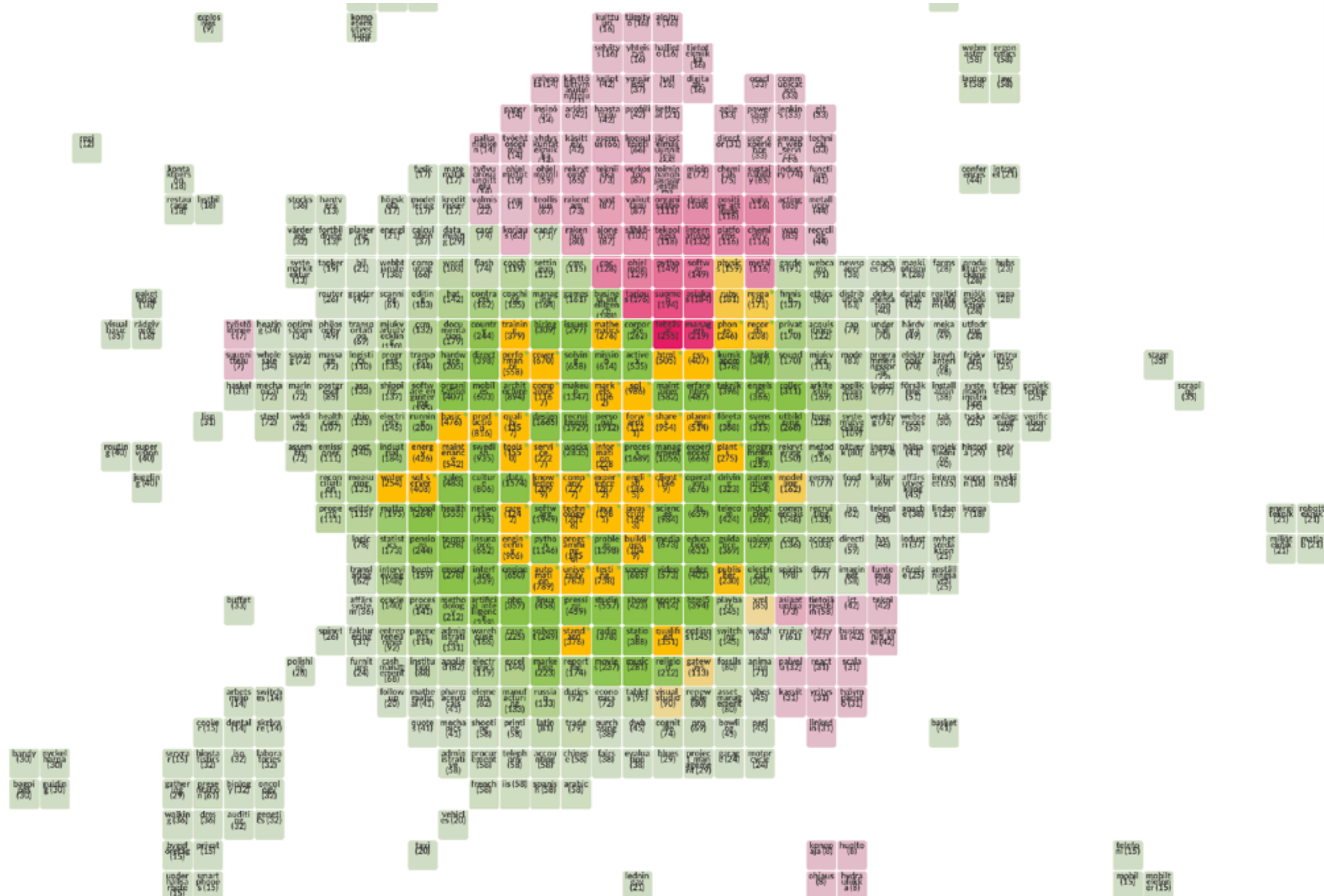
Values are job title family's shares (%) of yearly demand in general.



Washington DC: Difference from autumn 18 to winter 19

		microstat ion(52)	masonry (88)	steel (158)	asset_ma nagement (268)	acquisitio ns(483)	plumbing (528)	artistic (523)	shares (733)	elements (937)	editing (1150)	edge (1806)	business_deve lopment (2120)	industrial (1342)	manufact uring (1101)	estate (682)	servicing (506)	roi(441)	pop(170)	market_a nalysis (148)	adobe_ph otoshop (122)	firearms (104)	unions (93)	commerci als(59)		
		wallpaper (38)	drilling (105)	paint (223)	violence (301)	balancing (644)	cleaning (732)	purchasin g(759)	filing (832)	gathering (1523)	internet (1851)	media (2608)	energy (2456)	markets (2422)	water (1176)	crm(986)	prospecti ng(866)	negotiati ng(478)	negotiati ons(428)	photosho p(325)	illustrator (301)	filling (164)	clock (123)	weapon (81)	efp(24)	
	vms(55)	grading (66)	shoes(92)	prescripti ons(239)	ppe(370)	stairs (650)	buildings (817)	repairs (1036)	recruiting (1690)	recruitme nt(2017)	powerpool nt(2955)	project_m anagemen t(4222)	marketin g(4384)	presentati on(2929)	private (2367)	contracts (1525)	audits (919)	tactics (768)	stage (485)	idesign (448)	printing (391)	sports (338)	parks (145)	final_cut _pro(140)	film(45)	
	graph(30)	coldfusio n(39)	ergonomi cs(111)	packagin g(234)	export (355)	spanish (650)	inspectio n(1002)	property (1555)	construct ion(2111)	word (4457)	direction (4508)	sales (5499)	managing (5695)	companie s(4639)	driving (4175)	conductin g(2198)	procurem ent(1403)	bank (909)	lighting (636)	jurnalis n(572)	posters (469)	television (366)	multimed ia(284)	cameras (122)	epidemiol ogy(50)	
	adobe_col ordfusion (27)	aftereffec ts(64)	kindergar ten(159)	gold(276)	psycholog y(347)	abuse (649)	investigat ions(874)	options (1972)	transport ation(2892)	dental (5084)	excel (6281)	planning (9110)	qualified (9597)	client (9475)	culture (4967)	corporate (3623)	telephone (2124)	verificati on(1489)	radio (779)	avout (651)	shooting (558)	chemistry (357)	calibratio n(228)	music (120)	hiking (46)	osteopat hy(18)
		gastroent erology(40)	aesthetic s(128)	gifts(221)	virus (389)	researchin g(710)	interpreti ng(854)	cover(2458)	history (3407)	insurance (6429)	issues (10421)	training (13262)	company (15225)	religion (12194)	tools (9636)	standard (4671)	hardware (3150)	networks (2455)	computer s(1233)	telecommu nication s(754)	cms(396)	cad(350)	weapons (310)	semicond uctor(138)	psychiatr y(42)	
		nephrolog y(31)	auctions (109)	hubs (138)	videos (387)	peace (731)	rehabilita tion(976)	english (2630)	hiring (5273)	access (8512)	health (11355)	managem ent(20329)	knowledg e(20207)	data (16652)	design (10529)	testing (7427)	productio n(4368)	installatio n(2773)	trade (1335)	printers (701)	telecom (438)	autocad (347)	drawing (272)	solidwork s(114)	catia(40)	magazine s(23)
villages(4)		flying(77)	dialysis (112)	artificial_i ntelligenc e(207)	pcs(358)	auditing (634)	payments (1045)	sound(2914)	administr ative(4709)	care (8711)	technolog y(12175)	service (16922)	experien ce(31253)	education (15649)	performa nce(10904)	document ation(6964)	guidance (4251)	electrical (1899)	electronic s(1342)	vehicles (834)	library (436)	measurin g(357)	intranet (212)	arranging (143)	microsoft _powerpo int(104)	macintos h(70)
linguistics(39)	fieldwork (19)	explosive s(49)	nlp(129)	translatin g(279)	visual_stu dio(406)	asp(529)	mobility (1061)	accountin g(2446)	healthcar e(4422)	administr ation(5441)	mission (9047)	software (13438)	quality (13948)	duties (13273)	research (8989)	records (4993)	progress (3240)	terms (1621)	mechanic al(1309)	ada(816)	economic s(665)	restauran ts(253)	catering (252)	furniture (247)	copiers (129)	illustratio n(72)
		mvs(80)	tcl(117)	php(375)	html5 (424)	mysql (530)	sql_serve r(1067)	oracle (1988)	sql(2653)	experien ced(4280)	engineer (5784)	maintena nce(7636)	engineeri ng(8295)	school (7621)	basic (6274)	university (4280)	medicine (2869)	monitors (2298)	statistics (1003)	mathemat ics(932)	chemicals (551)	restauran t(388)	hotel (349)	painting (283)	frames (174)	sociology (97)
	jcl(26)	windows 2000(88)	rdbms (151)	ruby (247)	engine (450)	xml(601)	running (1105)	python (1850)	server (2488)	java (2940)	program ming(3229)	architect ure(3953)	processin g(3944)	supervisi on(4384)	evaluatio n(3865)	teaching (3016)	associatio n(2709)	laborator y(1602)	physics (933)	navy (745)	watch (602)	accidents (415)	appliance s(284)	carpentry (258)	autism (146)	psycholog ist(96)
		windows_ nt(84)	telephon y(130)	apache (333)	bus(369)	installatio ns(621)	routing (1023)	servers (1442)	linux (1886)	automati on(2071)	html (2097)	interface (1825)	logistics (1574)	coaching (1740)	children (1776)	nursing (2253)	conferenc es(1479)	philosoph y(1175)	follow_up (711)	ship(649)	army (530)	plc(275)	sampling (224)	flooring (150)	turning (138)	macos (40)
	animatio n(44)	mainfram es(29)	gateways (110)	laptops (314)	scanning (512)	switches (654)	wan(928)	tcp(975)	unix (1437)	css(1114)	business_i ntelligenc e(1019)	spreadsh eets(1040)	card (1248)	food (1381)	coach (1467)	transport (1078)	surgery (1086)	ethics (849)	mathemat ical(486)	aol(438)	ms_projec t(311)	peoplesof t(199)	dermatol ogy(134)	neurolog y(121)	casting (52)	

Helsinki vs. Göteborg





Curriculum Analytics

Explainable Predictive Analytics with Semantic AI

Headai **Digital_Twin on Curriculum** is similar model on educational offering.

It keeps itself up to date by reading +20 000 course curriculums from formal, non-formal, private training and online studies.

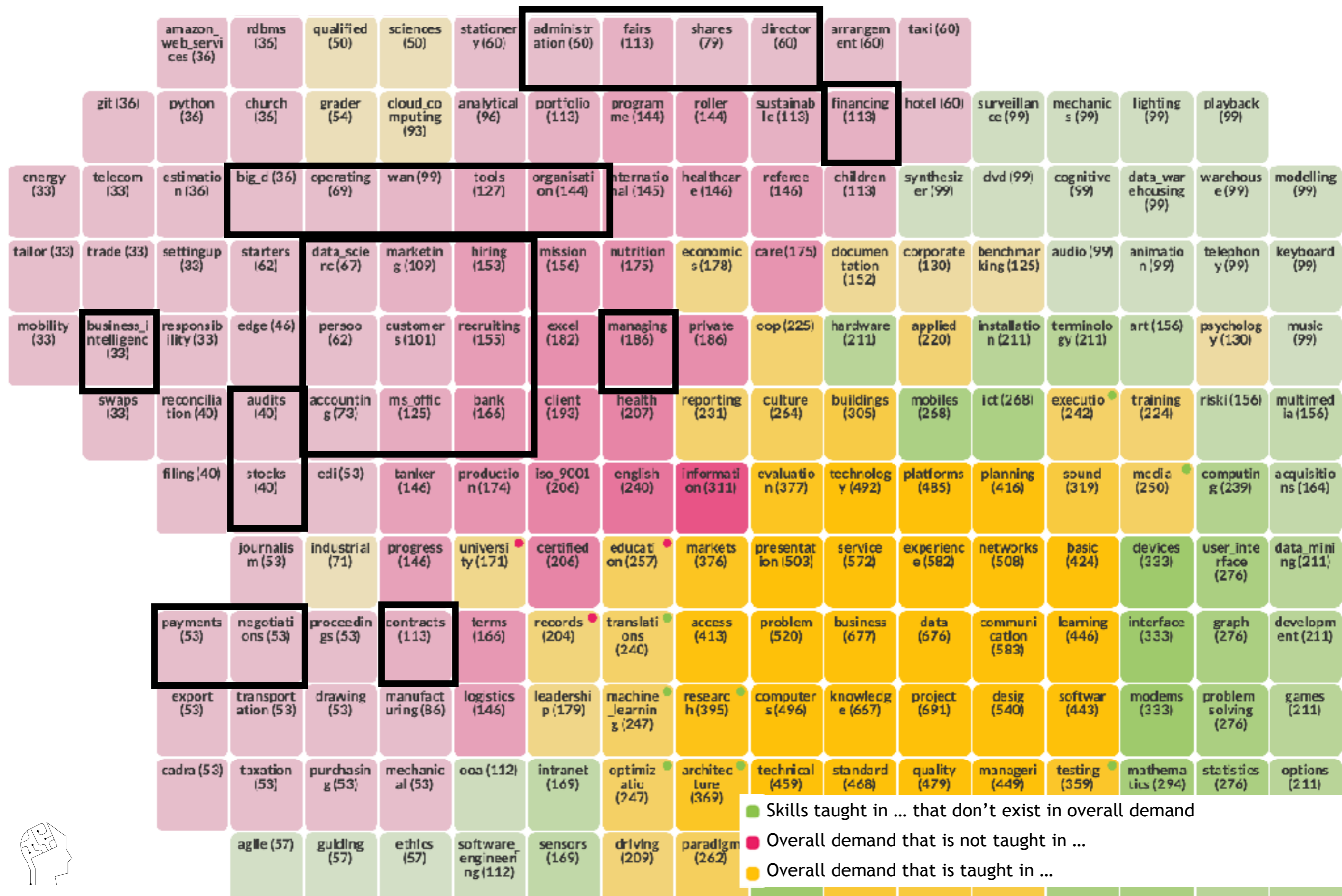
It knows what skills are educated and do offering and demand meet.



Curriculum vs. Industry

Skills development in ... in software & ICT

Skills gaps category 1: Financing & business related ICT skills



sw-eng skills 2018.09.22.22.29.28

[Summary](#)[2D Map](#)[Raw Data](#)

Python Developer, Curious AI Oy, Helsinki

Python Developer, Curious AI Oy, Helsinki, Haku päättyy: 16.02.2018, kokoaikatyö, Kesto: yli 12 kuukauttaCurious AI has built an in-house neural computing platform which allows our researchers and product developers to build state-of-the-art deep learning models, at scale. We are now scaling up and need more hands on the gun deck. Qualifications:- Strong Python programming skills- Experience with tools like Anaconda, Git, Containers, CI/CD- Knowledge on databases, networking and systems developm...Helsinki,Erityisasiantuntijat,...

Match : computing, data,

Relevancy : 0.6

Software Developer, Arc Technology Oy, Espoo or Kuopio, Espoo

Software Developer, Arc Technology Oy, Espoo, Haku päättyy: 15.02.2018 klo 16:00, kokoaikatyö, 7,5 hours / flexible, Kesto: yli 12 kuukauttaWe are looking for a Software Developer to strengthen our Software development team. Your work will consist of software development using database technologies like MS SQL, Oracle PL/SQL and JavaScript.You will be developing both new software products as well as customizing, modifying and maintaining existing products to our customers' needs. Locations possible are our Espoo or Kuopio offices....Kuopio,Erityisasiantuntijat,...

Match : software, data,

Relevancy : 0.6

DevOps Specialist, CSC-Tieteen tietotekniikan keskus Oy, Espoo

DevOps Specialist, CSC-Tieteen tietotekniikan keskus Oy, Espoo, Haku päättyy: 05.02.2018 klo 23:59, kokoaikatyö, Kesto: yli 12 kuukauttaWe are looking for a DevOps specialist to join our team developing and operating container cloud services. We develop and support the CSC container cloud used by agile software projects and research platforms. In addition to open data, we also support processing sensitive data at scale. Container cloud services are a new and quickly developing area at CSC. Our work is based on latest open source s...Espoo,Erityisasiantuntijat,...

Match : software, data,

Relevancy : 0.6

QA Manager, Tustor International Oy, Helsinki

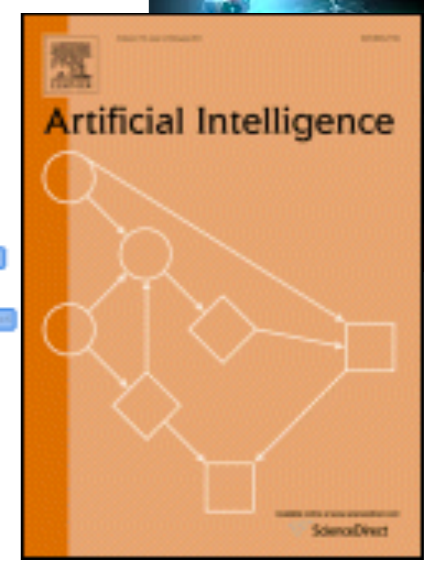
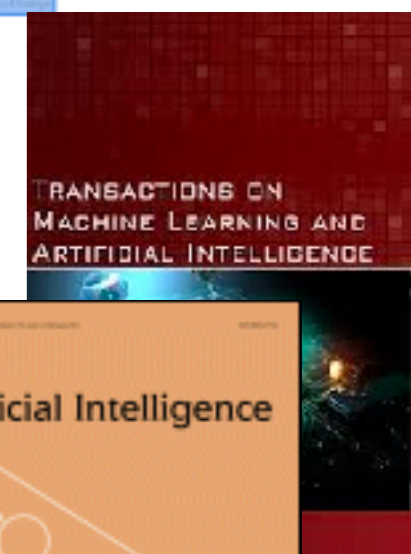
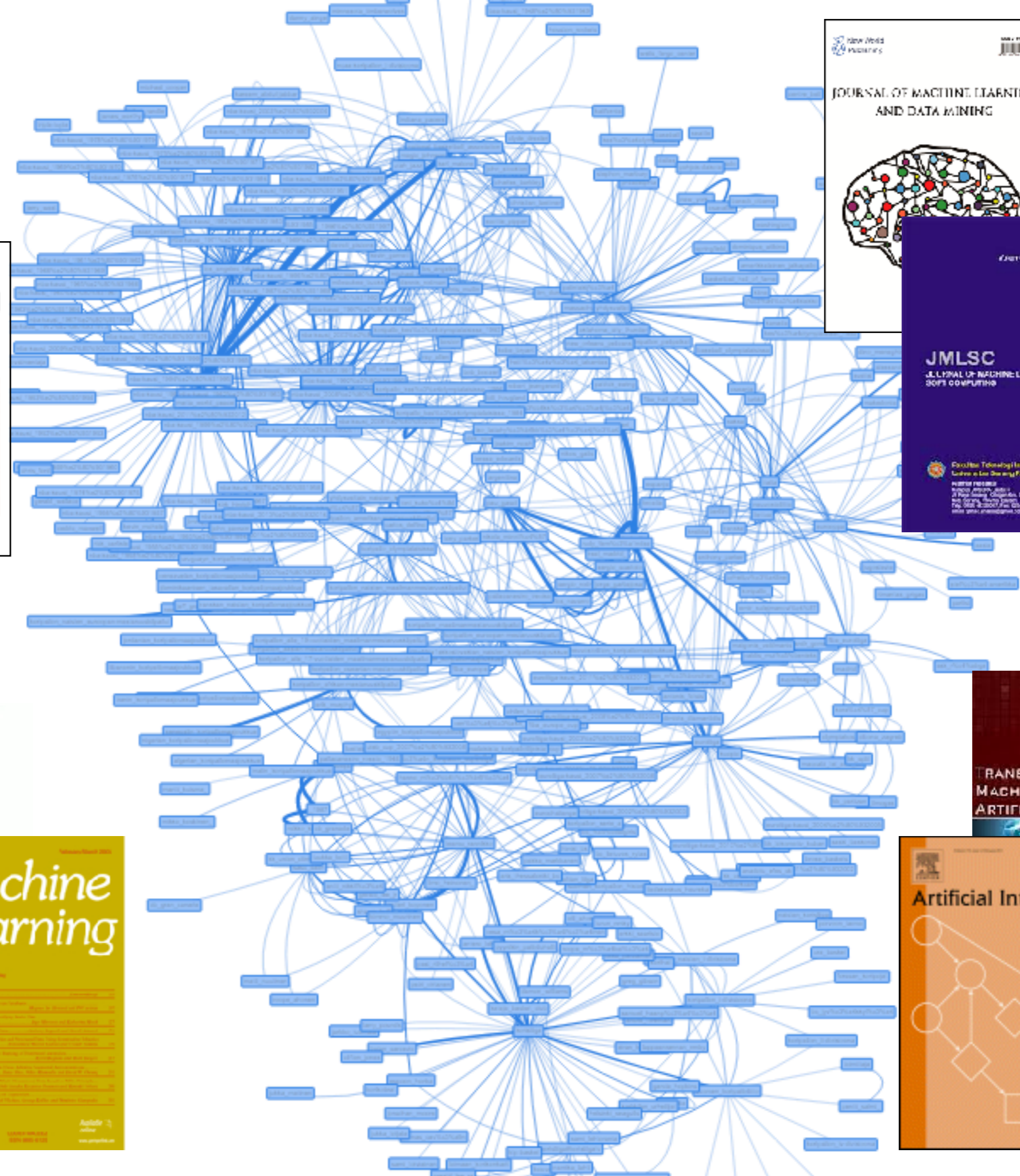
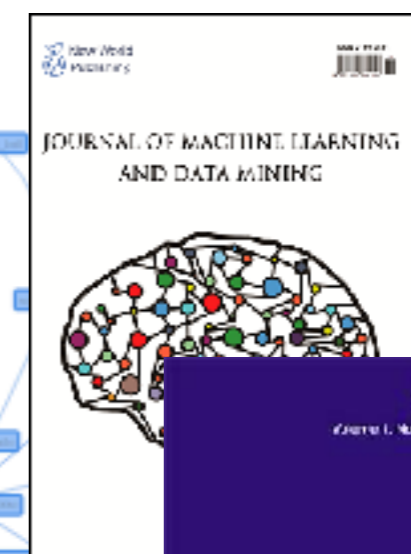
Adaptive Learning

Explainable Predictive Analytics with Semantic AI

Basic unit: one micro skill




Addition








Explainable Predictive Analytics with Semantic AI


Search: artificial intelligence data cloud c... x


 **'World's worst drawer' stumps Google AutoDraw**
BBC 2017-04-12 20:37:02.0
263195/265421

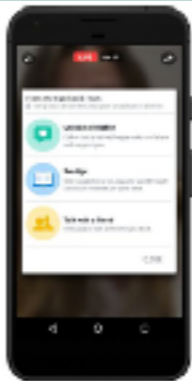
 **AI wins \$290,000 in Chinese poker tournament**
BBC 2017-04-11 18:31:49.0
260893/265421


 **Artificial intelligence and drones 'future of policing'**
BBC 2017-04-08 09:04:40.0
255134/265421


 **House intelligence panel tries to get Russia investigation back on track**
CNN 2017-04-03 23:08:33.0
245530/265421


 **Elon Musk's next move: Merging brains and computers?**
CNN 2017-03-28 17:30:47.0
234242/265421

 **Mnuchin: 'Not at all' worried about AI taking jobs**
CNN 2017-03-25 02:02:02.0
228641/265421

 **Facebook artificial intelligence spots suicidal users**
BBC 2017-03-01 15:17:36.0
192920/265421

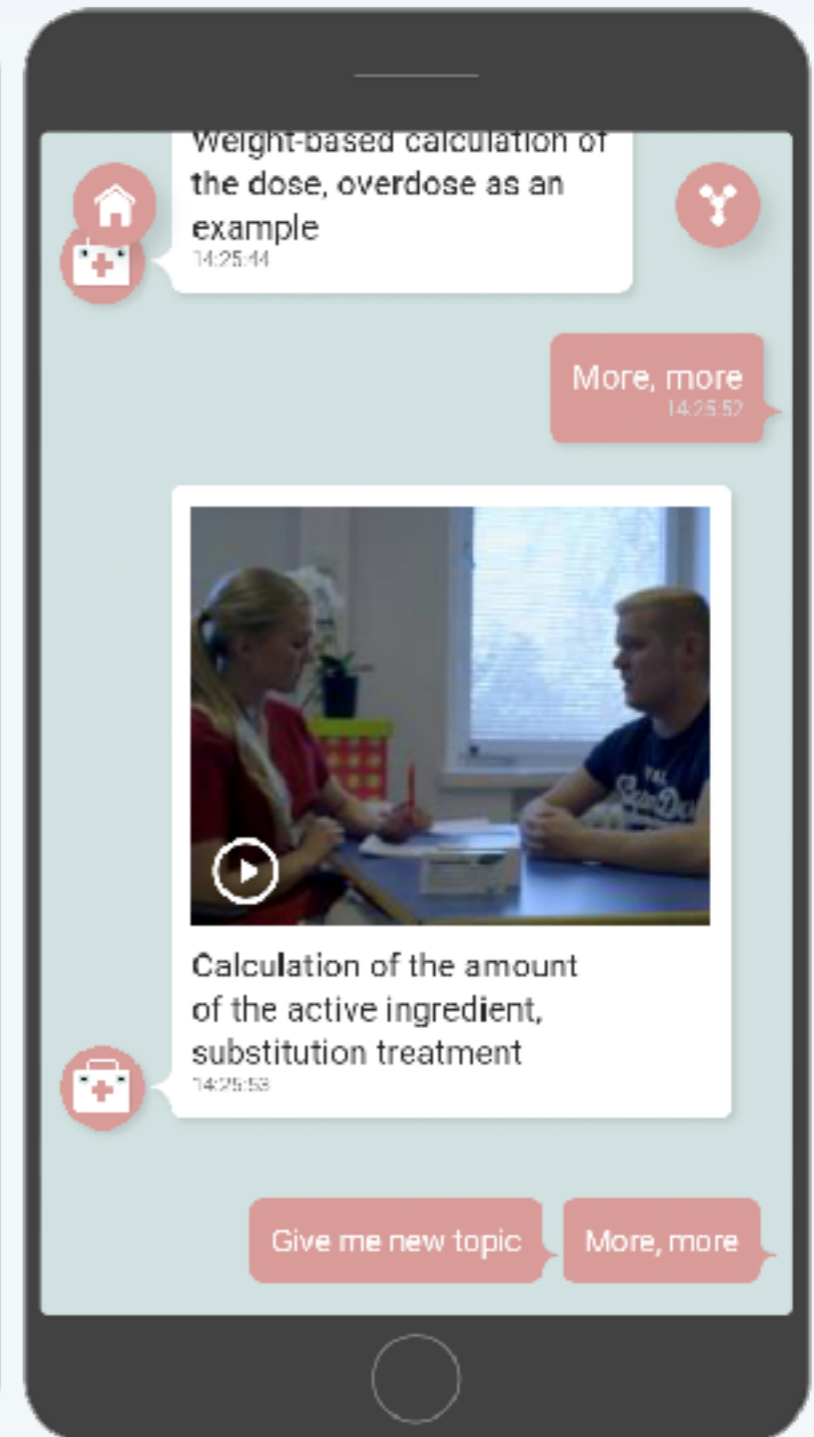
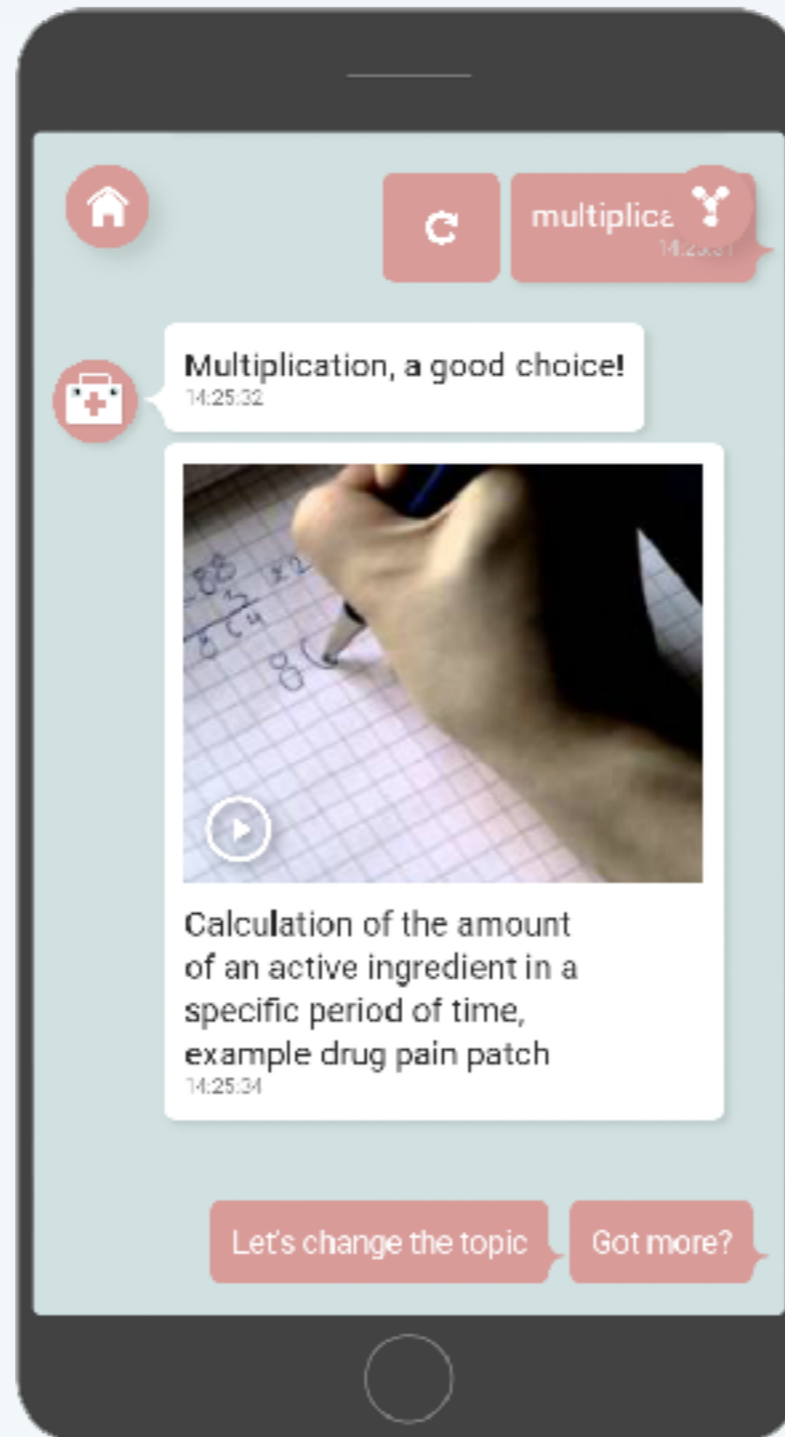
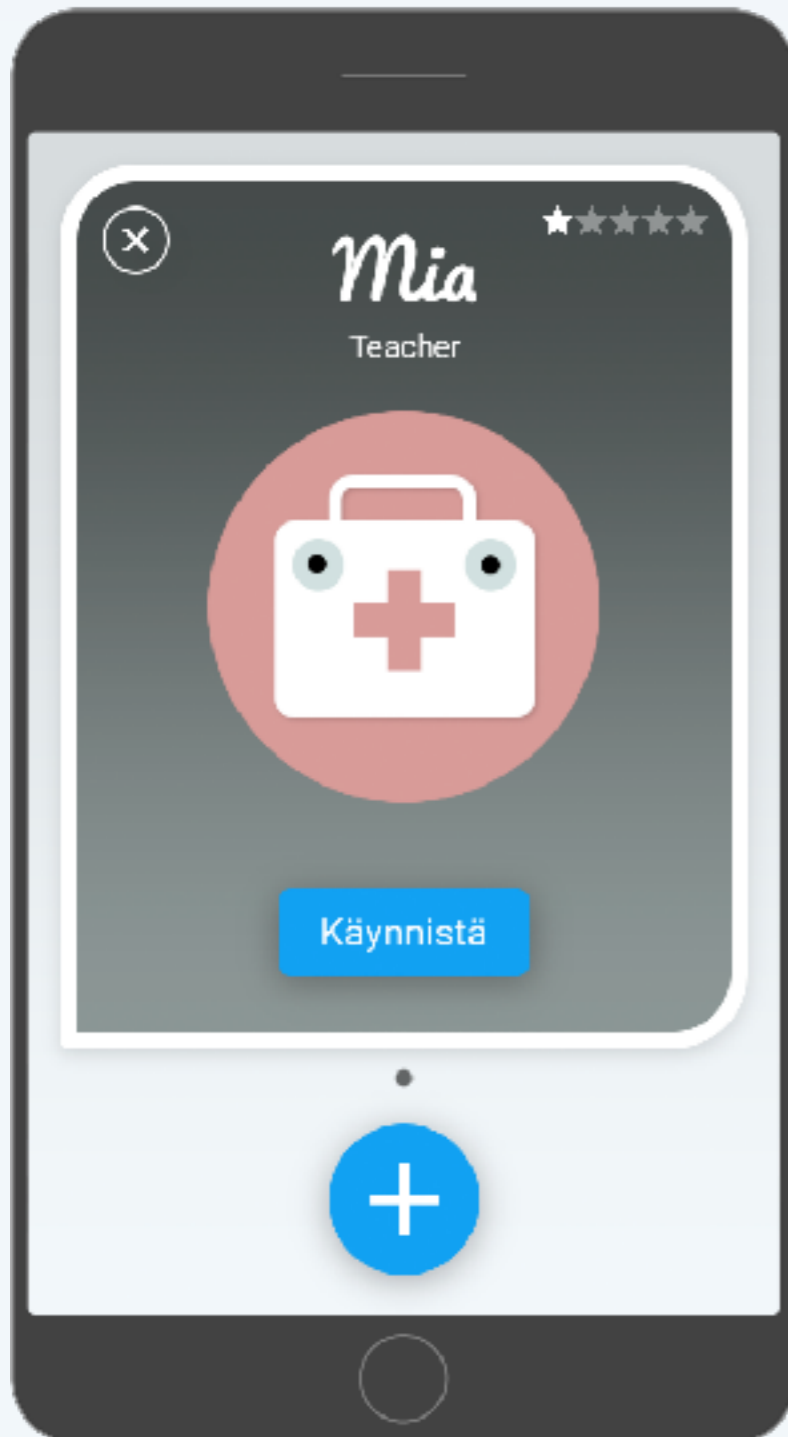
 **Facebook algorithms 'will identify terrorists'**
BBC 2017-02-17 08:15:26.0
179126/265421

 **AI program beats humans in poker game**
BBC 2017-01-31 21:20:43.0
159645/265421

 **Why scientists are debating the life span of robots**



Explainable Predictive Analytics with Semantic AI





Explainable Predictive Analytics with Semantic AI



**Fast
Degree**

× Test

Which of the following themes/concepts are directly related to **natural language processing**?

Choose true, false or skip. Every answer will either give or take a point affecting both topics. Skipping doesn't give or take.

- speech recognition
- word sense disambiguation
- philosophy of artificial intelligence
- pdp-6
- ontology
- streaming media
- statistical models
- library science
- computational complexity theory
- knowledge base

Submit results

× Test

- philosophy of artificial intelligence ✖
- pdp-6 ✔
- ontology ✔
- streaming media ✔
- statistical models ✔
- library science ✔
- computational complexity theory ✔
- knowledge base

Total
7p

Test again

Close topic

- Artificial Intelligence 1
- Participants
- Badges
- Competencies
- Grades
- Home
- Dashboard
- Calendar
- Private files
- My courses
 - Artificial Intelligence 1
 - Artificial Intelligence 2
 - nanoMBA
 - Yrittäjän_koulutusohjelman_va 2018

probability	approximate bayesian computation	bayesian linear regression		
statistics	frequentist probability	frequentist inference	bayesian network	statistical mode
bayesian probability	propensity probability	truth value	data	

Topic now: bayesian_probability >>> [NEXT QUESTION >>>](#)

Which of the following themes/concepts are directly related to bayesian probability?

- | | | | |
|-----------------------------|----------------------------|-----------------------------|---------------------------------------|
| probability interpretations | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |
| posterior probability | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |
| prior probability | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |
| bayesian inference | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |
| knowledge-based systems | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |
| inference engine | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |
| bayes%27 theorem | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |
| pierre-simon laplace | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |
| wikidata | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |
| random variable | true <input type="radio"/> | false <input type="radio"/> | skip <input checked="" type="radio"/> |

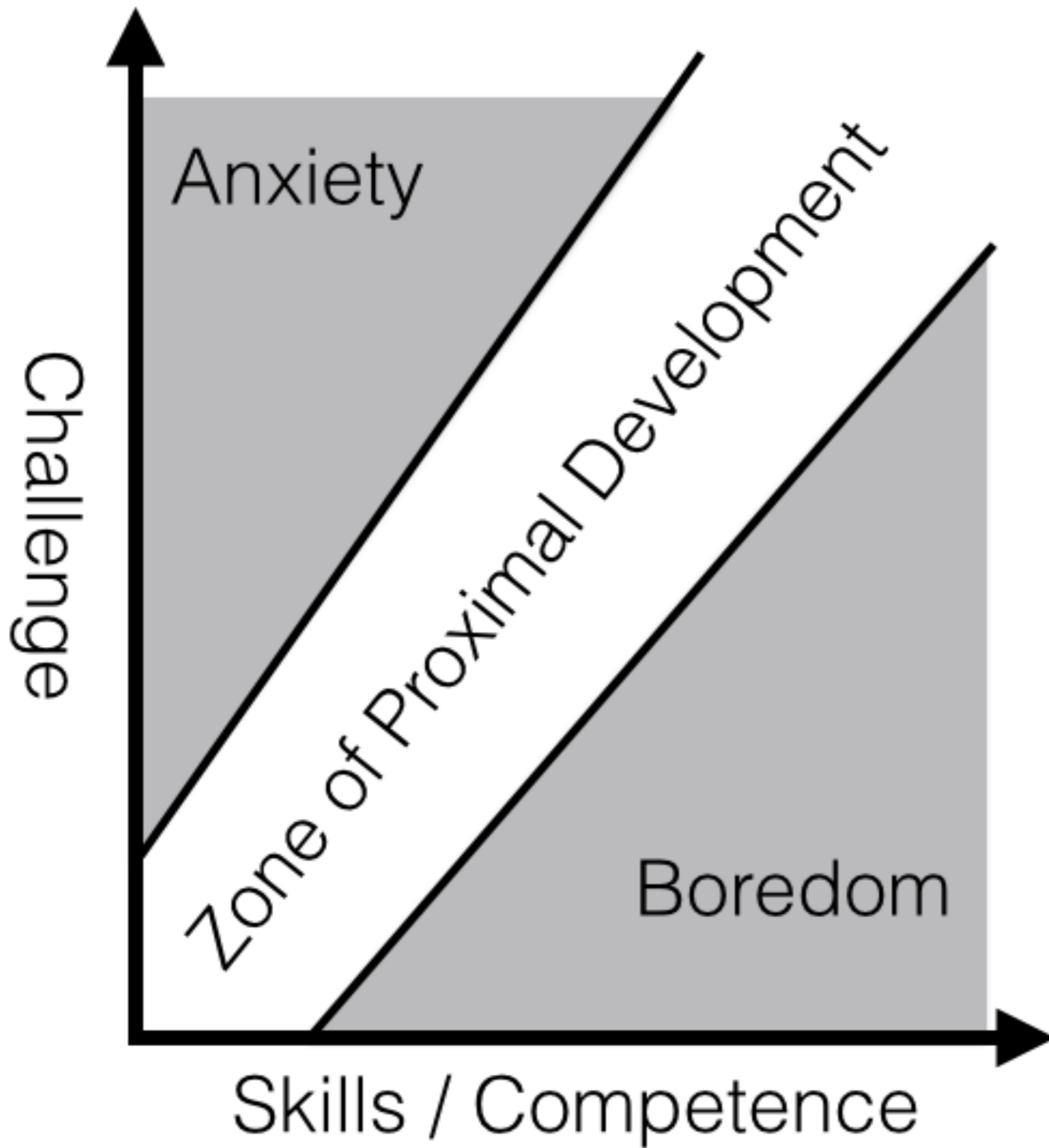
Learning Analytics

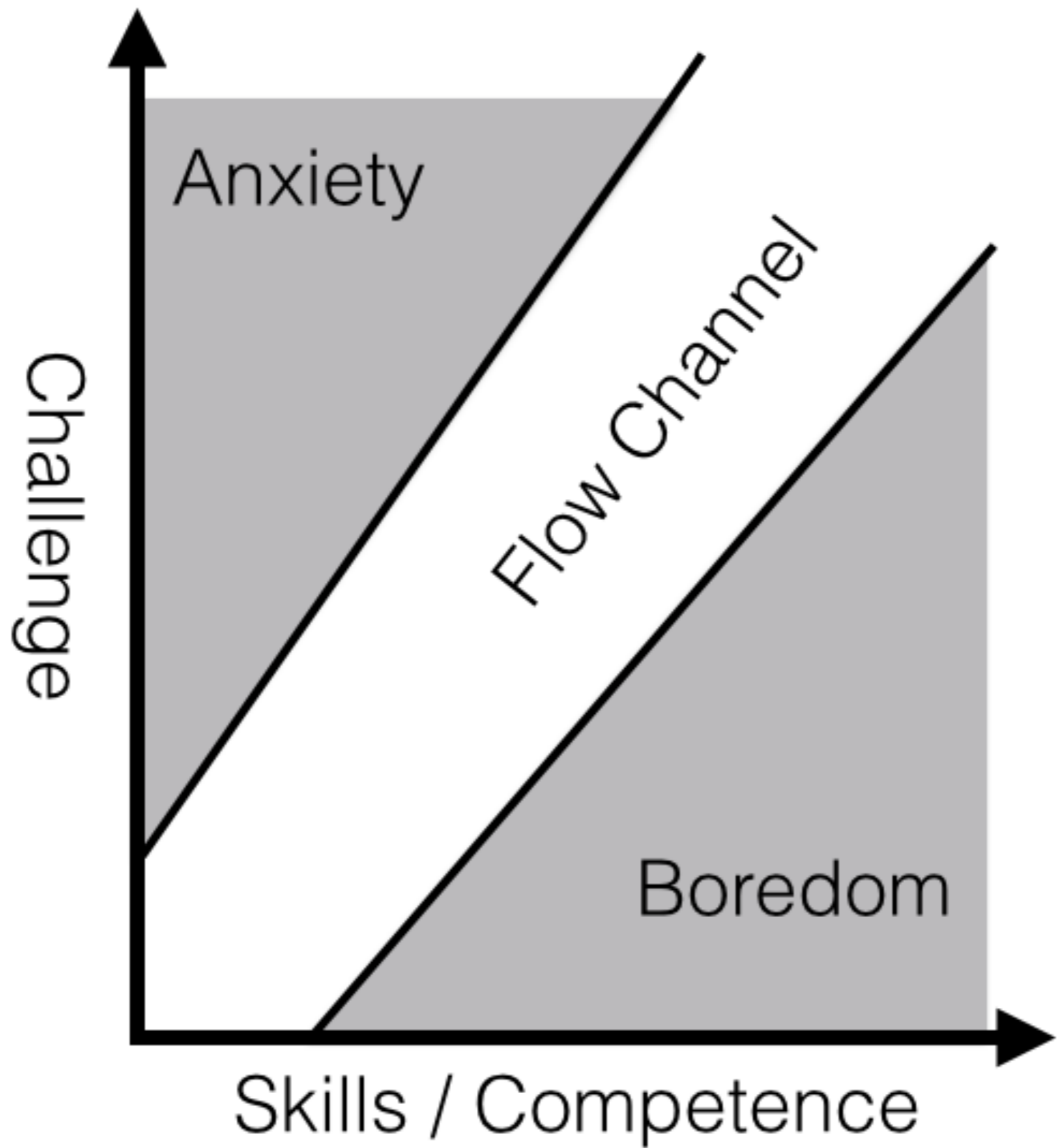
Explainable Predictive Analytics with Semantic AI

Basic unit: one micro skill



Addition





can do

ZPD

difficult

Multiplication

Division

Parentheses

Addition

Subtraction

Equals

Bigger than

Smaller than

Count

Numbers

Number line

- AI_1
- Participants
- Badges
- Competencies
- Grades

- Home
- Dashboard
- Calendar
- Private files
- My courses
- AI_2
- AI_3
- AI_1
- Blockchain
- Cloud_Computing
- Data_Science
- Yrittäjän_koulutusohjelm 2018
- Yrittäjän_koulutusohjelm 2017

Artificial Intelligence 1

Home / My courses / AI_1 / Level 1 / Theory for Level 1: History of AI

Theory for Level 1: History of AI

	alpac	outline of applied science	subsumption architecture	artificial general intelligence		
	analytical engine	outline of technology	action selection	list of programming languages for artificial intelligence		
	charles babbage	symbolics	automaton	time-sharing		
	machine learning	list of the oldest currently registered internet domain names	index of robotics articles	marvin minsky		
	cluster analysis	natural language processing	cognitive science	bertram raphael		
			outline of thought	dartmouth conferences		
strong ai	ai effect			computer scientist		
applications of artificial intelligence	weak ai	artificial intelligence		john mccarthy	ai winter	
history of artificial intelligence	speech recognition	alan turing			progress in artificial intelligence	
dartmouth workshop	outline of artificial intelligence	john von neumann	manchester mark 1			

Artificial Intelligence 1

Home / My courses / AI_1 / Level 1 / Theory for Level 1: History of AI

Theory for Level 1: History of AI

	alpac	outline of applied science	subsumption architecture	artificial general intelligence			
	analytical engine	outline of technology	action selection	list of programming languages for artificial intelligence			
	charles babbage	symbolics	automaton	time-sharing			
	machine learning	list of the oldest currently registered internet domain names	index of robotics articles	marvin minsky			
	cluster analysis	natural language processing	cognitive science	bertram raphael			
			outline of thought	dartmouth conferences			
strong ai	ai effect			computer scientist			
applications of artificial intelligence	weak ai	artificial intelligence		john mccarthy	ai winter		
history of artificial intelligence	speech recognition	alan turing			progress in artificial intelligence		
dartmouth workshop	outline of artificial intelligence	john von neumann	manchester mark 1				

AI_1

Participants

Badges

Competencies

Grades

Home

Dashboard

Calendar

Private files

My courses

AI_2

AI_3

AI_1

Blockchain

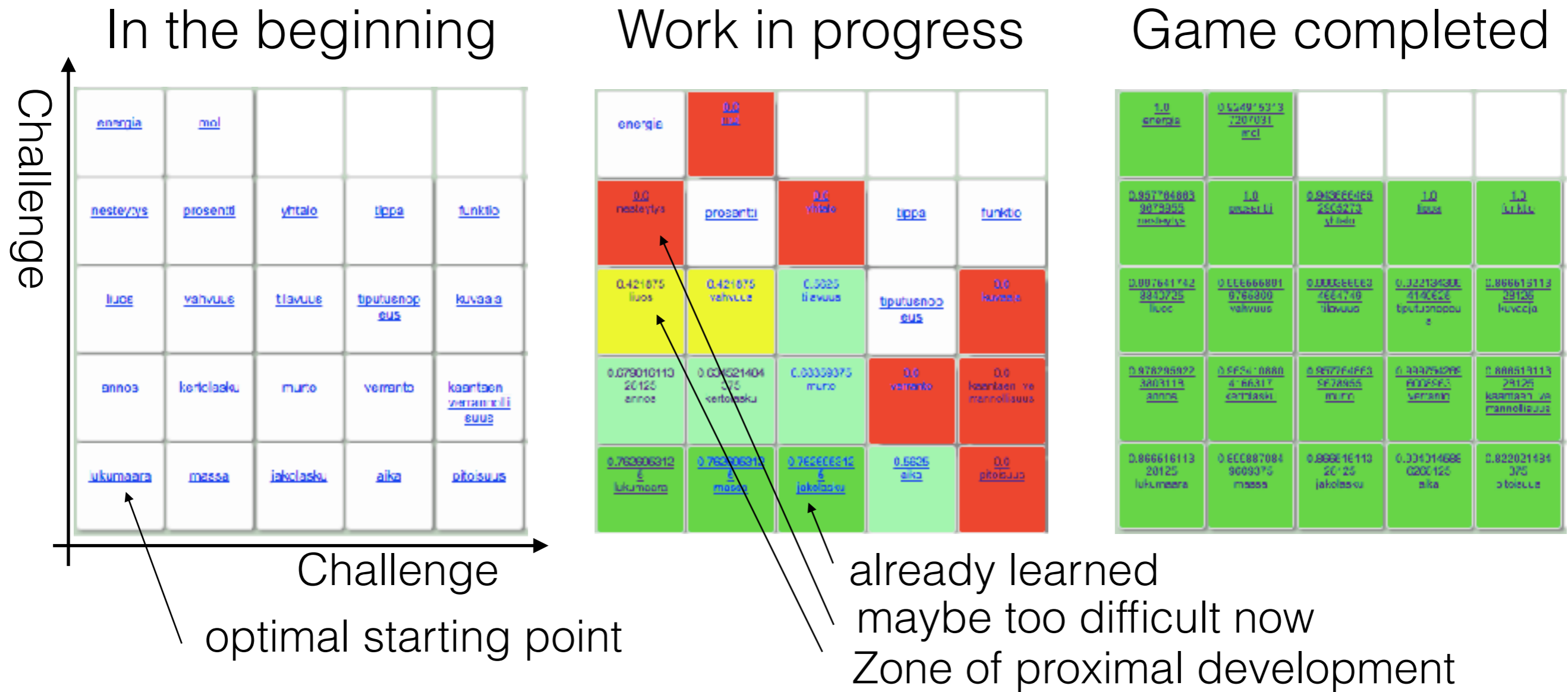
Cloud_Computing

Data_Science

Yrittäjän_koulutusohjelm
2018

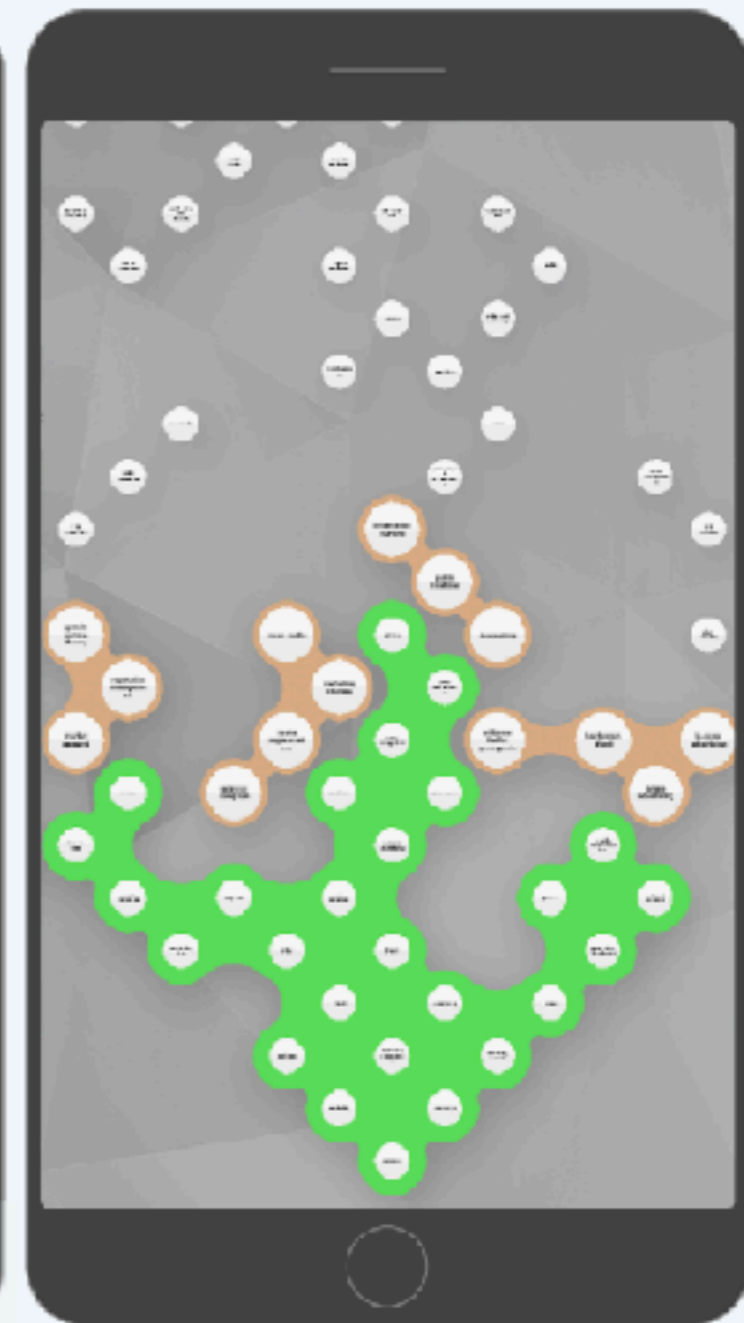
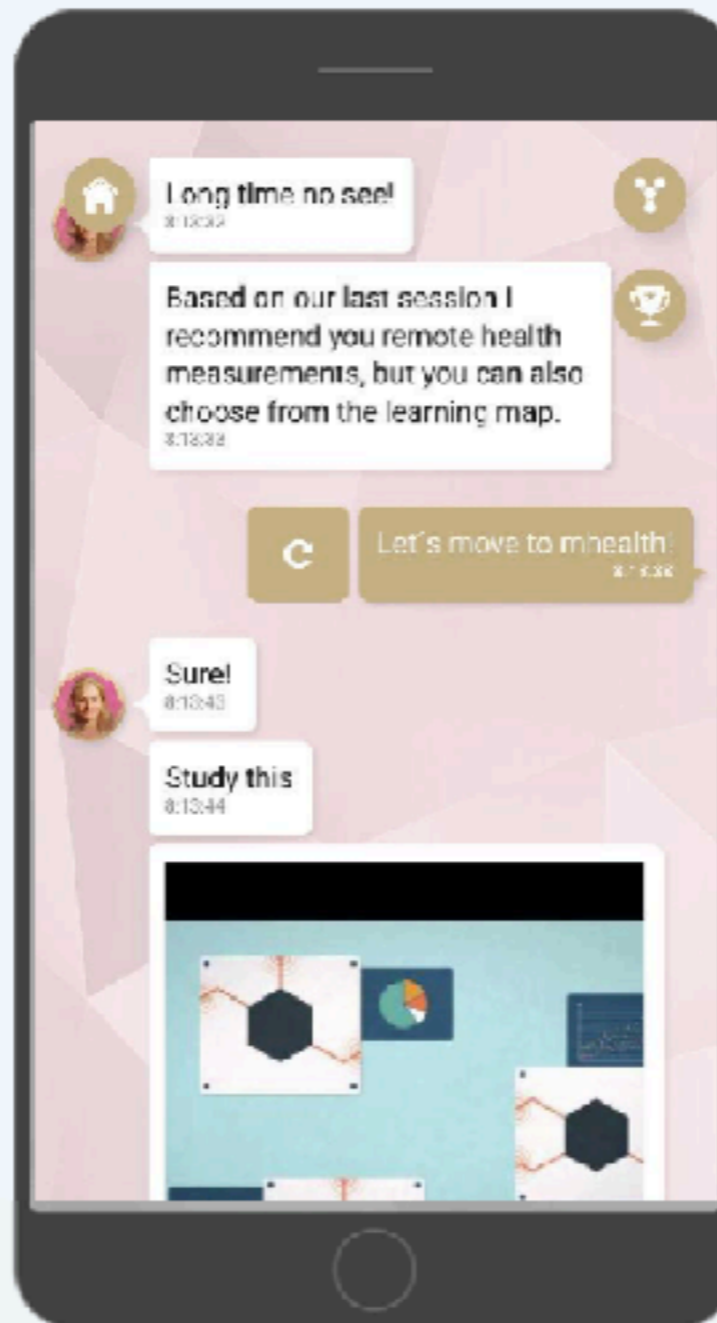
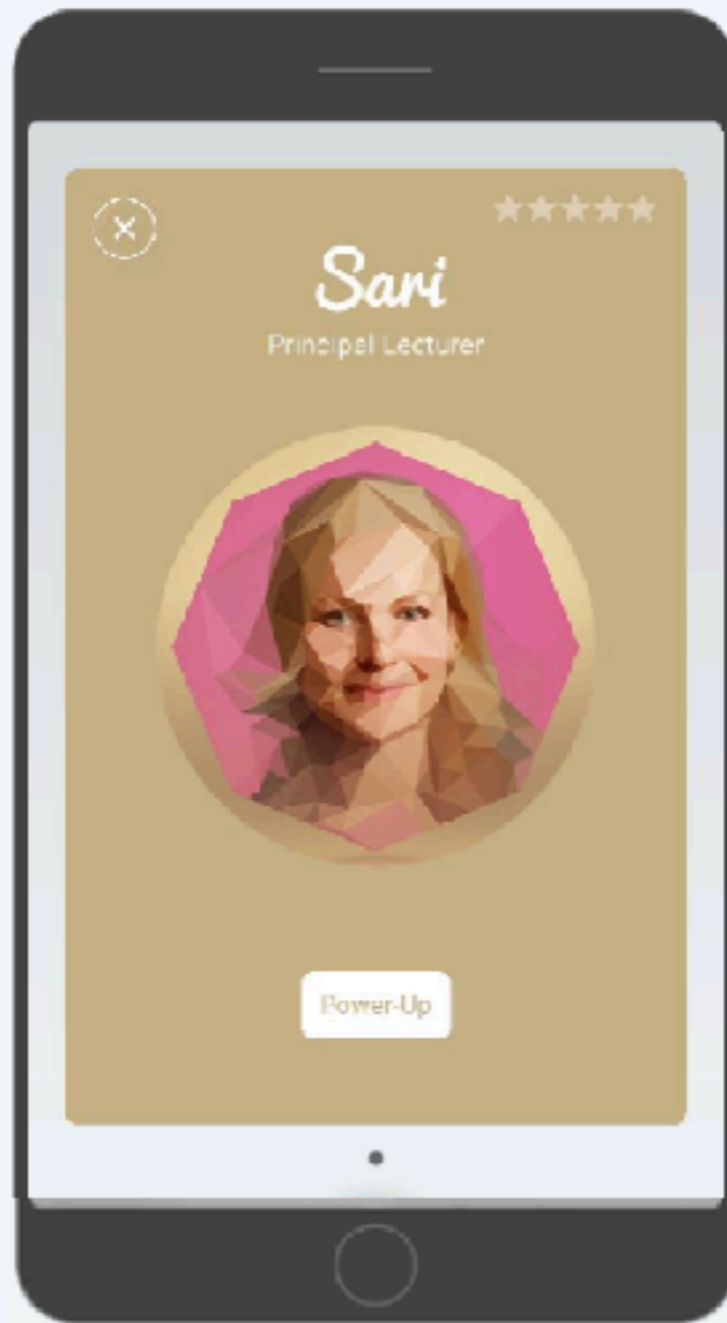
Yrittäjän_koulutusohjelm
2017

Explainable Predictive Analytics with Semantic AI

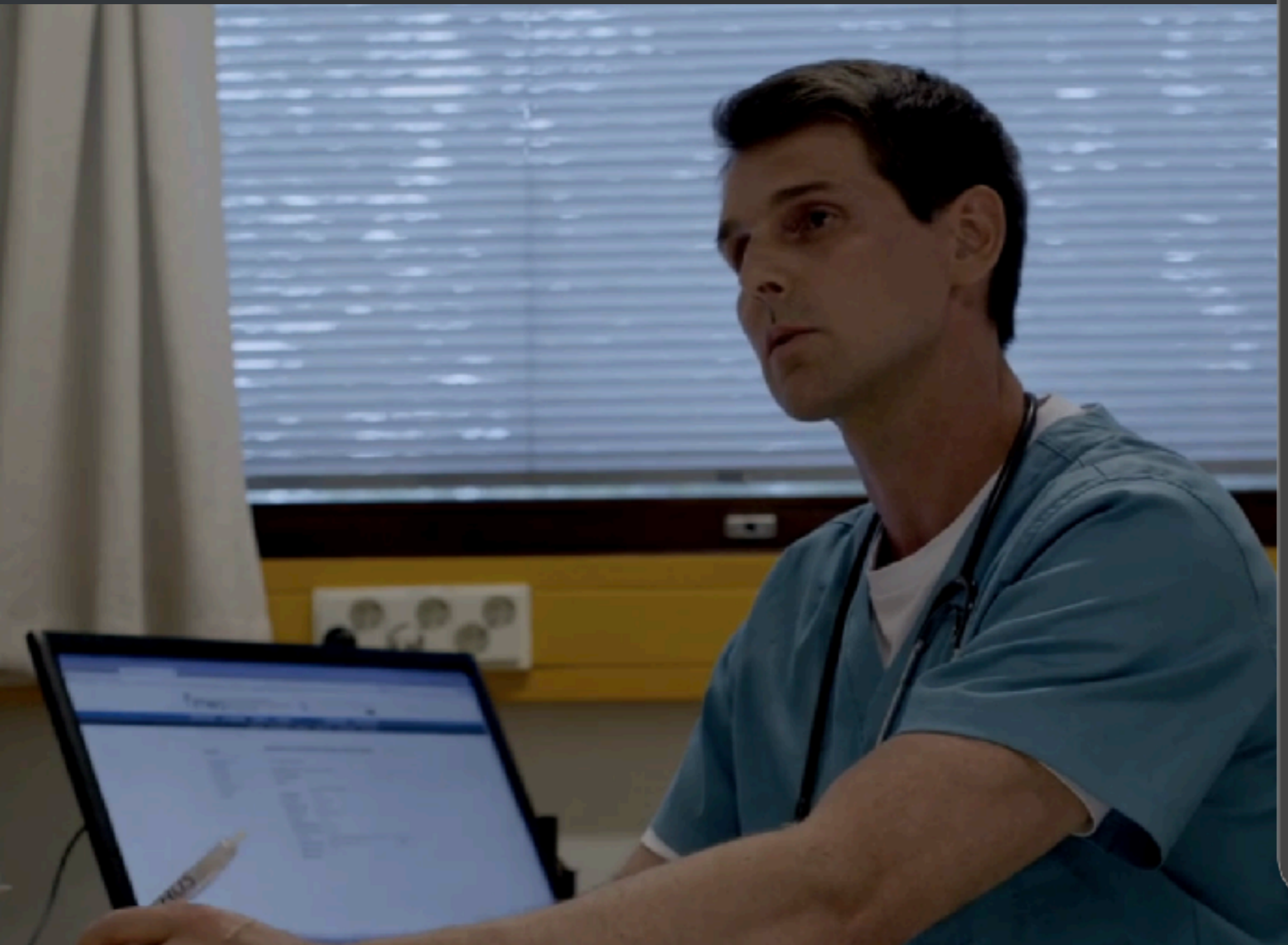




Explainable Predictive Analytics with Semantic AI

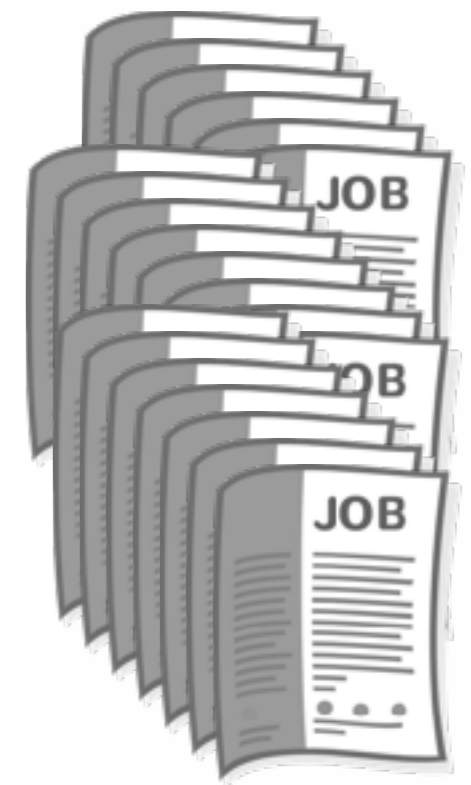
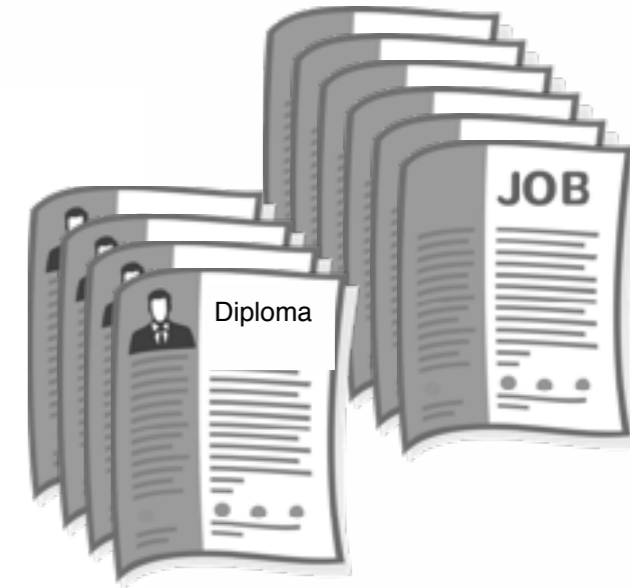
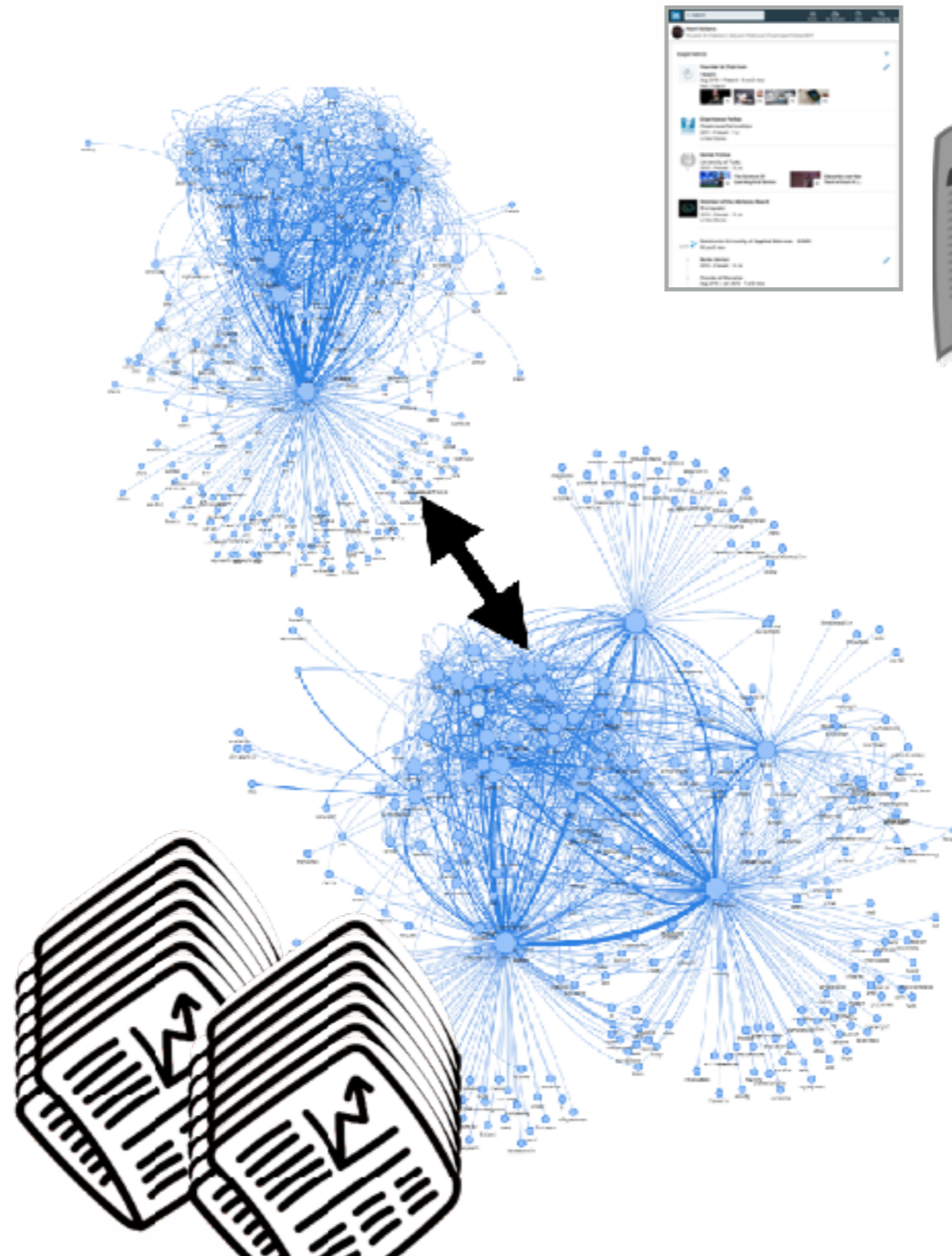


Explainable Predictive Analytics with Semantic AI





Future of Skills Development



Global need for upskilling

A world map is shown in a light, semi-transparent style against a dark background. Overlaid on the map is the text 'FIVE BILLION' in large, bold, red, hand-drawn style capital letters. The text is centered horizontally and spans across the middle of the map.

**FIVE
BILLION**

because AI will affect everyone

Explainable Predictive Analytics with Semantic AI

