PATTERN COMPUTER

The Pattern Discovery Company

PATTERN COMPUTER®

Computing System Designed to Discover Patterns

- Comprised of multiple Pattern Discovery Engines™
- Foundation for multiple projects: drug discovery, ProSpectral™, XAI, Powered by Pattern
- Mission- discover NEW patterns in the most important datasets, provide true explainability of the results which can not only save lives but also save time, money and resources

"Pattern Computer is the most advanced ML company on the planet."

- LBNL intro at the DOE AI Invitational

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Project Starbright:

The 5 Top Cancer Killers

Drug Discovery
Diagnostics/Bio Analytics

Project Python:

Enable ProSpectral to diagnose more diseases; PDE drives the data processing

Explainable AI:

Enable Researchers, Subject Matter Experts, Business Decision Makers with Factual Insights

Liquidity:

Guggenheim Securities
Lathrop & Watkins
JPM

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Current Bio Pipeline for Drug Discovery

Disease	Subtype	Candidate	Pattern Discovery (*in silico*)	*in vitro* Testing	Pre-Clinical	Clinical	Partner
Breast Cancer	Triple-Negative Breast Cancer	PCI020302	✓	✓	In progress		BERKELEY LAB
	Triple-Negative Breast Cancer	PCI020301	✓	✓	In progress		
Ovarian Cancer	High-grade Serous Ovarian Cancer	PCI150301	✓	✓			
		PCI150302	✓	✓			
		PCI150303	✓	✓			
		PCI150304	✓	✓			
		PCI150305	✓	✓			
Prostate Cancer	Metastatic Castration-Resistant Prostate Cancer	Novel gene expressions discovered	In progress				FRED HUTCH CURES START HERE™
Lung Cancer		Novel gene expressions discovered	In progress				

*LBNL: Lawrence Berkeley National Laboratories; CRL: Charles River Laboratories; TD2: Translational Drug Discovery; LANL: Los Alamos National Laboratories

Current Bio Pipeline - Diagnostics and Others

Disease	Subtype	Candidate	Pattern Discovery	Partner	Project Category
Colorectal Cancer	Colorectal Cancer	New clusters and predictive success	In progress	Fred Hutch Cancer Center	Patient Data & Risk Analytics
COVID-19	All Variants	ProSpectral: top speed, accuracy	Complete	LANL Cantor Bioconnect	Diagnostics & Signal Processing
Pediatric Pneumonia	Bacterial, Viral	Radiology analytics	In progress		Diagnostics & Signal Processing
Crohn's Disease	Microbiome	Leading Protein Indicators discovered	Completed	Calit2, The Knight Lab (UCSD)	Diagnostics

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METABRIC Database:
The PCI Difference

For years, researchers used neural nets to run this open-source dataset, and like a sky at twilight, they only found one or two genes…

Not a very bright result!

BUT…

PCI's Pattern Discovery Engine discovered 50-100 genes, here shown in 7-dimensions in our proprietary Dimensional Navigator, allowing us to design two new drug now in their fifth round of tests -

A galaxy of information!

ProSpectral™ Diagnostics

Disruptive Medical Diagnostic Platform

Easy to use, portable device
9.85” W x 8.29” H x 7.64” D
Less than 10 lbs
Battery-capable

Detection

Detects infections and differentiates via spectral differences

Economic

Fast, accurate, & low cost
Few dollars per test
No reagents

ProSpectral Device

Speed

3 seconds per test
360 tests per hour, if manual
1200 tests per hour, if automated

Extendable

Add new diagnostic capabilities via software updates

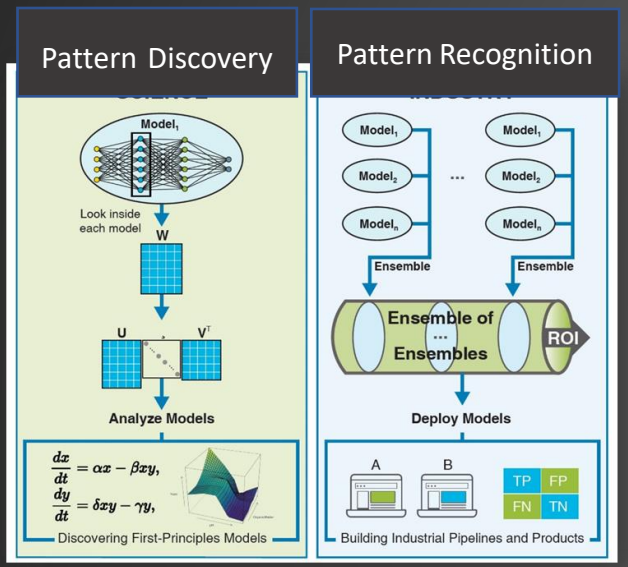
Accurate & Flexible

98.8% Balanced accuracy
Tunable to higher sensitivity e.g., 100% sensitivity achieved at >92% specificity

- 2023 — COVID-19, Influenza A&B, RSV
- 2024 — Add’l Infectious Diseases
- Beyond — Cancers, etc.

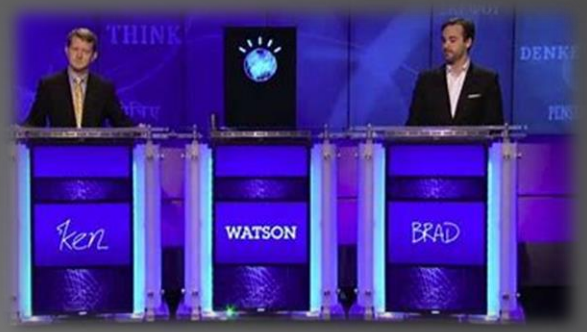
Pattern Computer Difference: Explainable AI

PCI's XAI vs. IBM Watson



PCI makes major discoveries

- Shows how the pattern was discovered (XAI)
- Mathematical equation describes the results
- Easily confirm the results



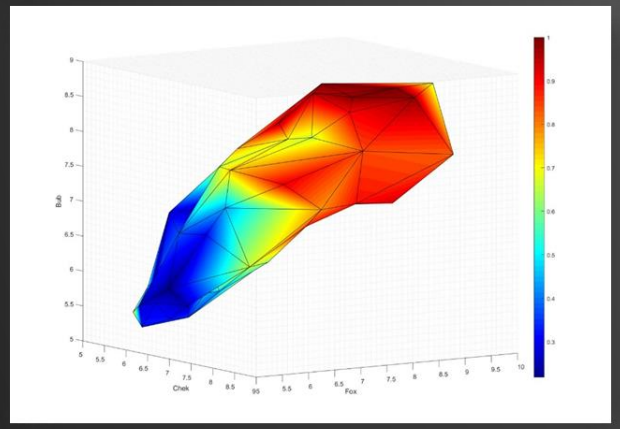
Jeopardy

IBM: marketing before results

- Watson Health did not discern their customers' needs.
- J&J, Mayo Clinic, and CVS Health

Watson:

- Fast reader and storage system
- Fed tons of Information
- Victim of (poor) data quality.
- Task-based reader
- Limited context and creativity



Gene-based Risk Patterns (Breast Cancer)

- Visualizing genetic risk will allow doctors to literally "walk" their patients out of high risk pattern zones and into survival zones.

"Watson is IBM's AI technology for business, *helping organizations to better predict and shape future outcomes, automate processes, and optimize employees' time.*"

'IBM Positioned as a Leader in 2021 Gartner Magic Quadrant for Insight Engines' – IBM Newsroom

Published Paper with 35 National Labs co-authors: [2111.13786.pdf (arxiv.org)]

Commercial Engagements

Powered by Pattern Computer

*****5x increase year to year in commercial engagement***

Aerospace

- Two Statements of Work completed
- Three more in negotiation

Oil/Gas

- One Statement of Work completed (Q4 ’22) w/global energy resource company
- Second forecasted by Q1 ’23 with more projects being discovered/discussed

Genomics

- Two Statements of Work completed with two separate companies in 2022 (incl. Namida Lab)
- Up to seven forecasted by end of ’23.

Minerals

- One Statement of Work discussions with multiple Australian companies
- One Statement of Work forecasted for ’23

Other

- In conversation with companies in telecom, big pharma, semiconductors, big tech as well as State Unemployment fraud and a National Lab’s study on energy.





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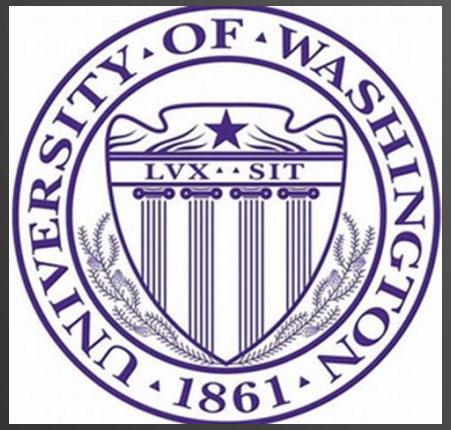
In collaboration with Alliance Partners



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HP, *former CTO*
Intel, *former Collaboratory Research Director*

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AT&T Bell Labs, Lucent Technologies, *former Director*
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Continental Airlines, *former CIO*

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MMCO, *President*

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Barry O'Sullivan, School of Computer Science & IT at University College Cork, Director of the SFI Centre for Research Training in AI

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