

How to efficiently investigate economic crime with the help of AI?

Our best practices in leveraging AI to analyze and investigate economic crime



Tomáš Tunega

Chief Sales Officer

Cogniware Co-Founder

Turning my passion in AI and IT into my daily work. Sales with background as Analyst on security projects.

Loving Father

I want my family to live in a safe environment.



Cogniware changes the way how to solve crimes by using technology to identify digital footprint in huge information overload worldwide.



Domain-focused Solutions



Long-Term Relationship



Professional Services



Financial Crime is on the rise



It's all over

\$3.1T loss in ML in 2023 globally

\$485B in bank fraud

Financing drug and human
trafficking and terrorist financing



Known and unknown

Various ways and techniques

Patterns

Always one step ahead



Struggles

Tactics and technology

Regulatory challenges

Data overload and resources
limitation

AI Is All Over the Place



It is quite smart

Patterns

Anomalies

Predictions

Q&A over the data



Everybody talks about it

It is the future

It becomes accessible

The funding is there



It is everywhere

Chat GPT

Electronics

Web Products

Argos

AI is not simple zero or one



AI in Investigation

No magical black box!



**Recommendation and
data processing system**



We can serve



Government

Central Bank/FIU

Immigration

Prison guards



Armed forces

Police

Intelligence

Army



Commercial

Financial Institutions

Manufacturing

Utility/Gas/Oil/Electricity

AI in Investigation

Advantages and Challenges of AI Integration

Argos Introduction

Argos platform **uncovers hidden** relationships and **analyzes suspicious** behavior

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Argos platform **uncovers hidden** relationships and **analyzes suspicious** behavior across **versatile** data in highly secured **on-prem** environments

Argos Introduction

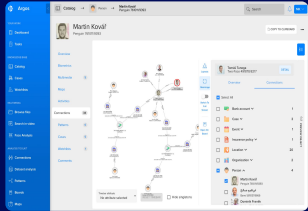
Argos platform **uncovers hidden** relationships and **analyzes suspicious** behavior across **versatile** data in highly secured **on-prem** environments so it's easily searchable and clearly presented.

Argos Introduction

Argos platform **uncovers hidden** relationships and **analyzes suspicious** behavior across **versatile** data in highly secured **on-prem** environments so it's easily searchable and clearly presented.

We do it by visualizing →

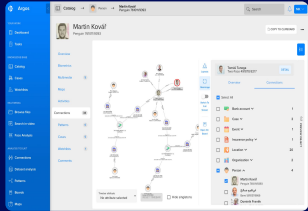
Argos Introduction



Relationships

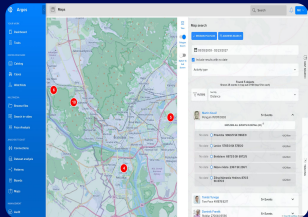
Identifying connections between people and objects.

Argos Introduction



Relationships

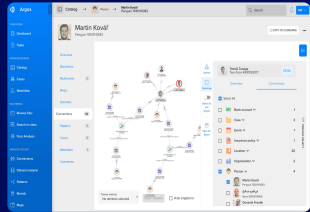
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Locations

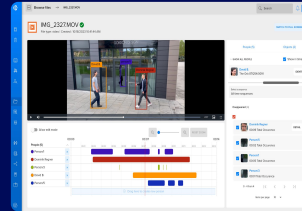
Mapping the location and movement of multiple targets and general map search.

Argos Introduction



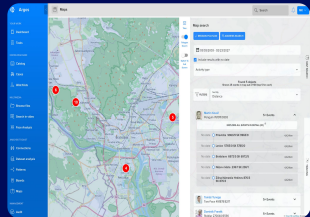
Relationships

Identifying connections between people and objects.



Multimedia

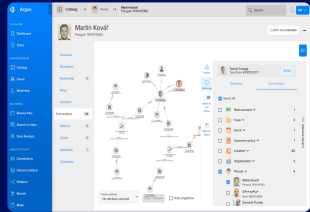
Identifies targets and their co-locations using biometrics.



Locations

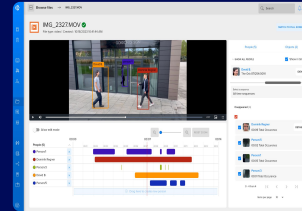
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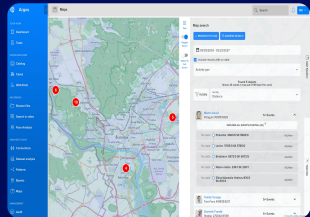
Relationships

Identifying connections between people and objects.



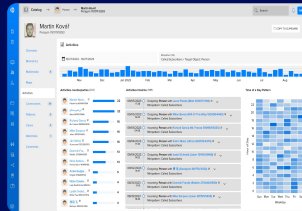
Multimedia

Identifies targets and their co-locations using biometrics.



Locations

Mapping the location and movement of multiple targets and general map search.



Pattern Of Life

Establishing timelines and understanding behavior patterns.

Data Collection

Data are transformed from various files into entities and links with properties



Internal Siloed Databases

Data about criminal history, family relationships, social networks or cars/guns ownerships are fragmented.



Documents and Multimedia Files

Crucial information comes from unstructured data that is complicated for automatic processing and extraction.



Transaction Logs

Keeping track of all transactions like financial transactions or call data records is pretty challenging.



Argos utilizes data sources

- Internal databases
- Internal file systems/content management systems
- External databases/watchlists
- OSINT
- Crypto transactions
- Geo systems
- Cybersecurity



OSINT collection



Blockchains



BTC



BCH



LTC



ETH



ETC



XRP



ZEC



DASH



EOS



ALGO

ERC-20 Tokens



USDT



USDC



BUSD



GUSD



TUSD



DAI



LINK



PAX



AMPL



BAT



BNB



BNT



COMP



cBAT



cDAI



cETH



cREP



cSAI



cUSDC



cWBTC



cZRX



CEL



CEL



CGT



CHZ



CRO



CRPT



CVC



DRGN



ELF



ENG



ENJ



EURS



FET



FTT



GNO



GNT



GYEN



HOT



HT



HUSD



ICN



IDRT



KCS



KNC



LEND



LEO



LOOM



LRC



MANA



MATIC



MCO



MKR



MLN



MTL



NEXO



NMR



NPXS



OKB



OMG



OXT



PAXG



PAY



POWR



QNT



RCN



REN



REP



RLC



SAI



SALT



SENT



SNT



STORJ



sUSD



TGBP



VGX



WBTC



WETH



WTC



XAUT



XCHF



ZIL



ZRX



ZUSD



AAVE



CRV



RENBTC



SUSHI



UNI



YFI



eToro AUDX



eToro CADX



eToro CHFX



eToro CNYX



Toro EURX



eToro GBPX



eToro GLDX



eToro JPYX



eToro NZDX



eToro RUBX



eToro SLVX



eToro USDEX

Structured data analysis with AI

Structured data is perfect for AI analysis due to its organization.



Anomaly Detection

identification of outliers in time series and relation data



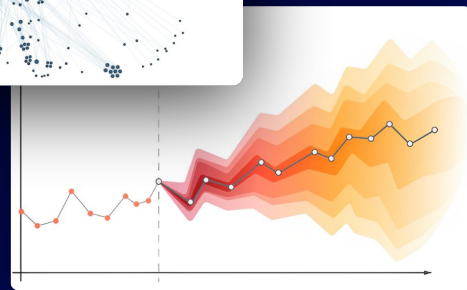
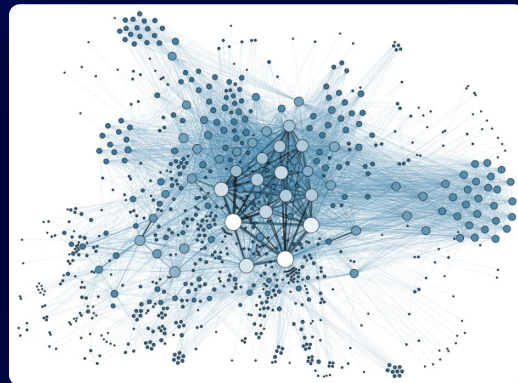
Predictions

identification of best approach to investigation and what happens next in the data



Recommendations

risk-evaluation criteria and identification of problematic targets



AI and Multimedia

Multimedia Analytics delivers shorter resolution times, enhanced accuracy, unmatched flexibility and scalable capabilities.



Identify a criminal suspect

based on a photo or voice in a fraction of a second



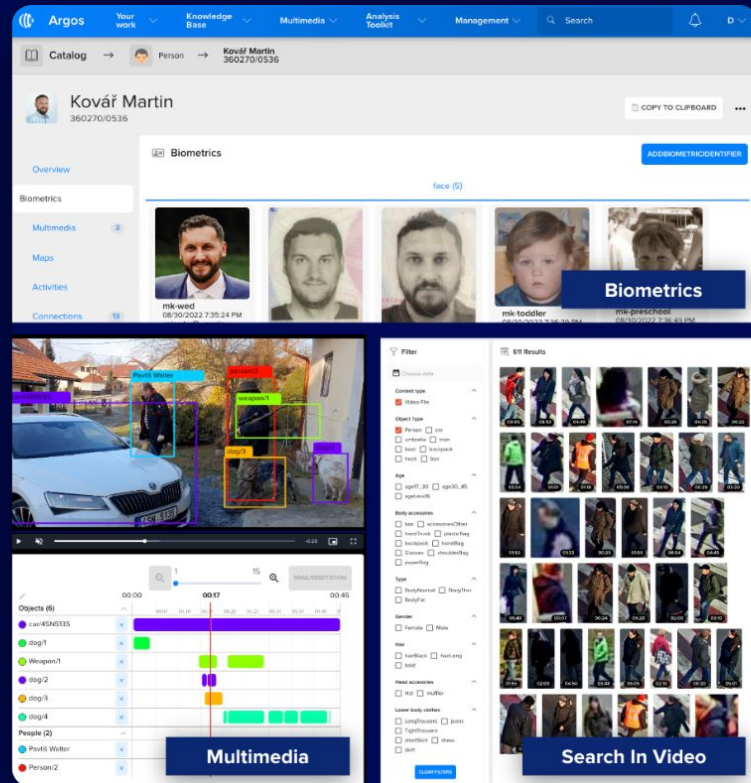
Uncover an enemy agent or terrorists

based on his connections, behavior and background info



Detect public threats and extremists

by analyzing content from social networks



Analyzing Documents with AI

Document analysis provides insights and information extraction to speed up work and provide actionable intelligence.



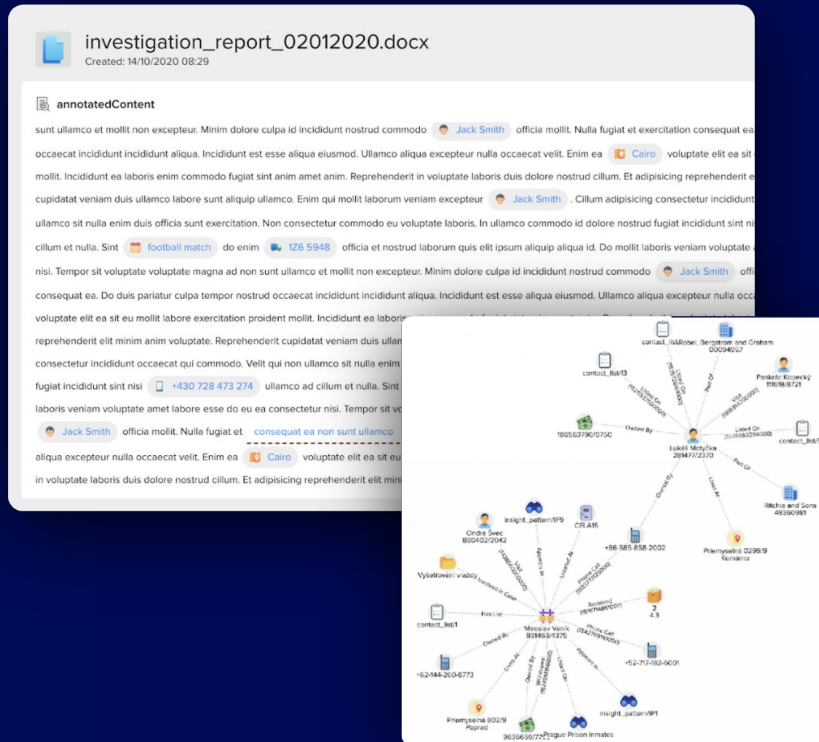
Identify people or companies



Recognize relationships



Location intelligence resolution



Does LLM Make Sense For Investigation?



Question -> Answer

Interpret complex data, making information more accessible.



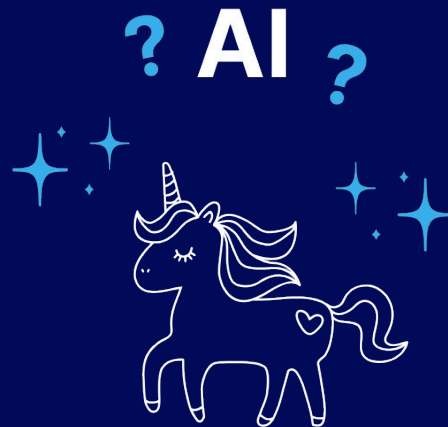
Data driven knowledge

Quickly process and analyze large volumes of data, identifying relevant information and patterns.

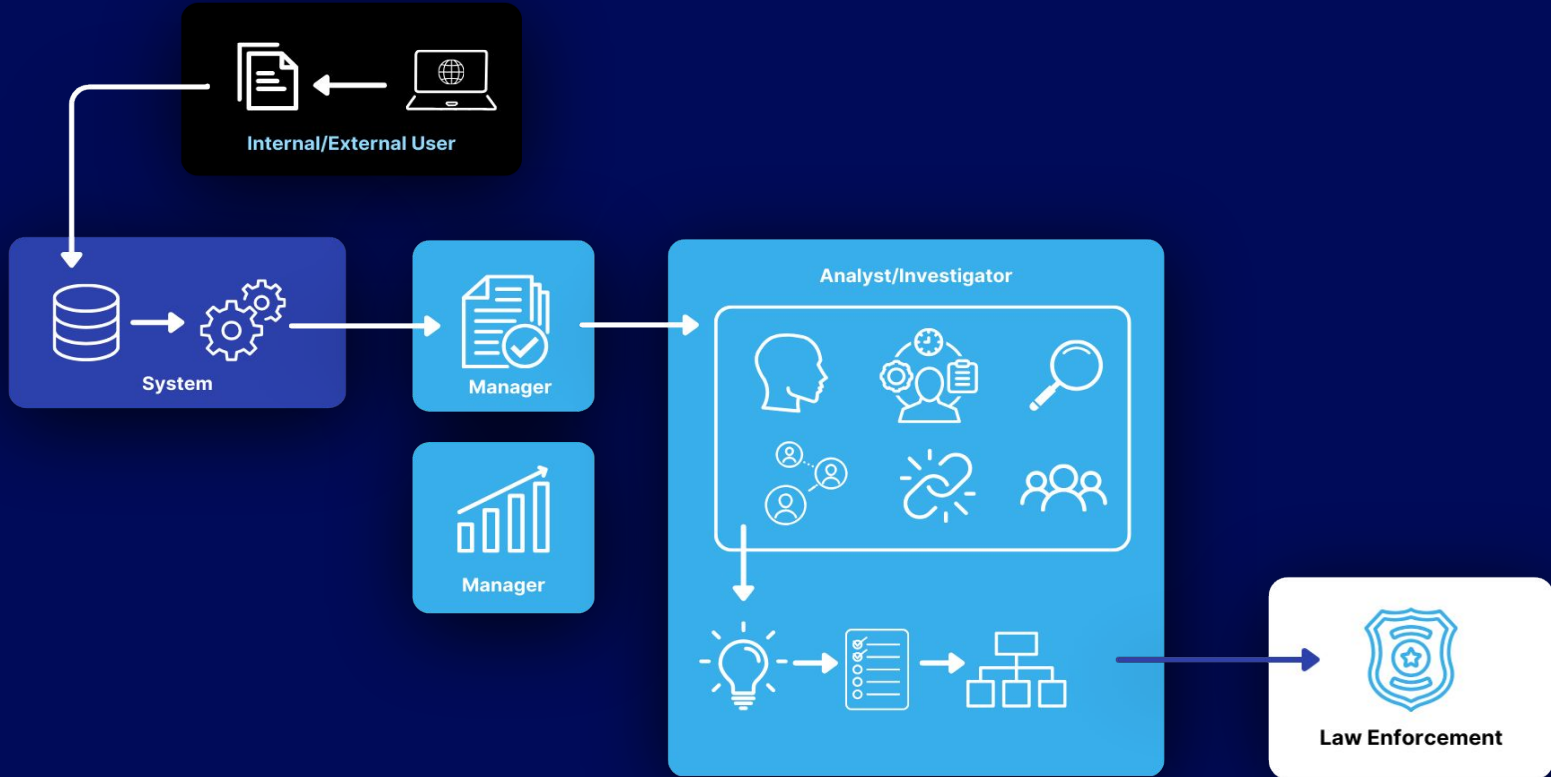


Complex analysis

Generate insights and hypotheses, enhancing investigation efficiency and thoroughness.



The journey of an STR - customer success story



Case Management

The screenshot displays a web application for Case Management. On the left is a dark sidebar with icons for user profile, dashboard, folders, lists, and a user menu labeled 'MSZ'. The main content area is titled 'Cases' and includes a '+ Add new case' button. Below this are filter and view controls. The filter section includes 'Assigned to me', 'Created by me', 'Show closed cases', and a 'View' dropdown. The view section includes 'Group by case type', 'Group by Status', 'Sort by due date', 'Sort by priority', and 'Sort by last update'. The case list on the right shows 8 items, with the first three highlighted. Each case entry includes a play button icon, the case name, the assigned officer, and the case type with a date.

Case Name	Officer	Date	Case Type
Heisenberg Investigation	Maria Sanchez • Officer	05/30/2023	Organized Crime
Blue Meth Distribution	Hank Schrader • Detective	04/19/2023	Drug Distribution
Analyze Drug Lab Residue	Maria Sanchez • Officer	04/19/2023	Drug Residue Analysis
Industrial Laundry Lab	Dr. Emily Clark		Money Laundering
Street Dealers Investigation		04/20/2023	Drug Trafficking
Fring Drug Empire	Sarah Miller • Detective	04/21/2023	Organized Crime
Chemical Supply Chain	James Lee • Officer	04/23/2023	Drug Manufacturing
A1A Car Wash	Rick Garcia • SWAT Team Leader Captain	04/24/2023	Money Laundering

Case Management

The screenshot displays a Case Management application interface. On the left is a dark sidebar with icons for user profile, dashboard, folders, documents, tables, images, editing, and a bottom button labeled 'MSZ'. The main area is divided into a left pane showing a list of cases and a right pane showing details for the selected case, 'Heisenberg Investigation'.

Case List:

Case Name	Officer	Date	Type
Heisenberg Investigation	Maria Sanchez • Officer	05/30/2023	Organized Crime
Blue Meth Distribution	Hank Schrader • Detective	04/19/2023	Drug Distribution
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Chemical Supply Chain	James Lee • Officer	04/23/2023	Drug Manufacturing
A1A Car Wash	Rick Garcia • SWAT Team Leader Captain	04/24/2023	Money Laundering

Case Details: Heisenberg Investigation
Maria Sanchez • Officer

Overview | Tasks 3 | Objects 123 | Related Cases 3 | Security | Attachments

Description: This investigation focuses on Walter White, alias "Heisenberg", and his involvement in the large-scale production and distribution of blue @methamphetamine. The primary objectives are to gather evidence against @Heisenberg and dismantle his drug empire. Key activities include surveillance, forensic analysis, and undercover operations.

Type: Organized Crime

Assignee: Maria Sanchez • Officer

Status: In progress

Priority: High

Due date: Not set

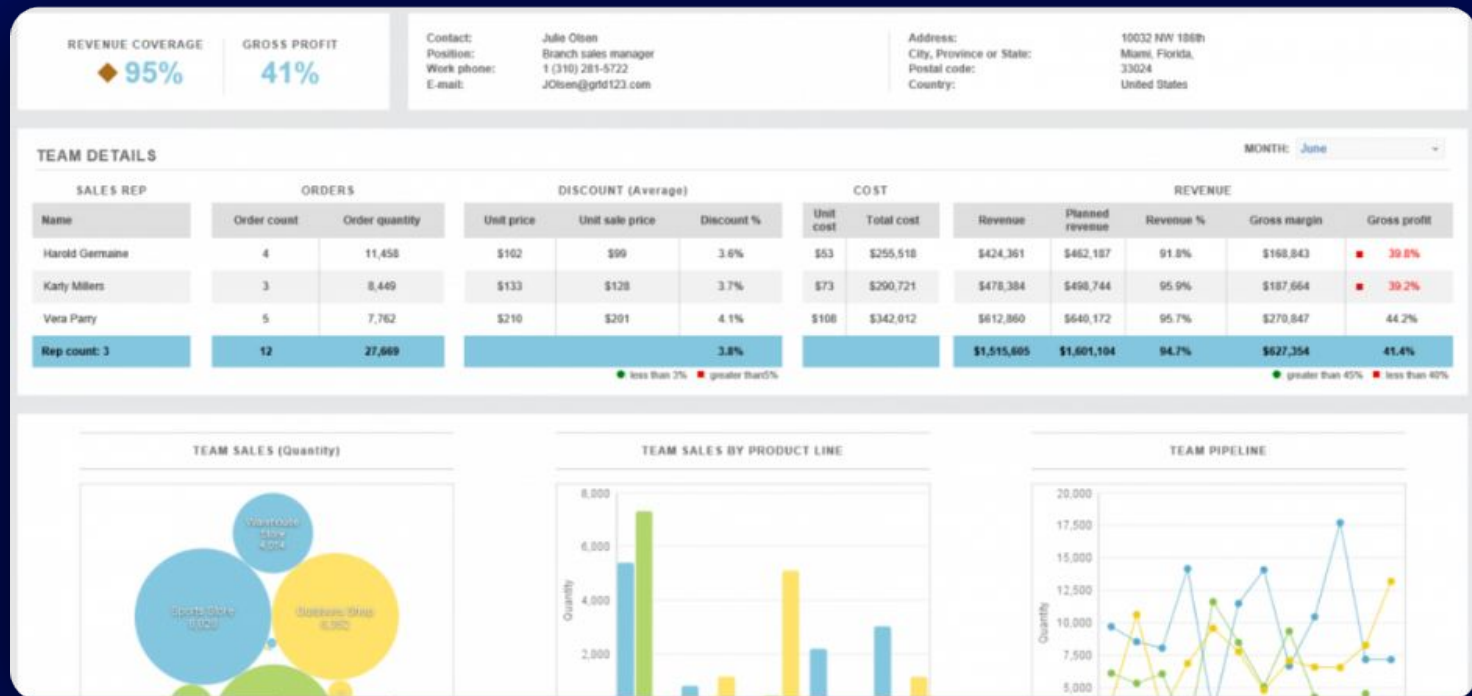
Creator: Sarah Miller • Detective

Created: 04/19/2023 9:15 AM

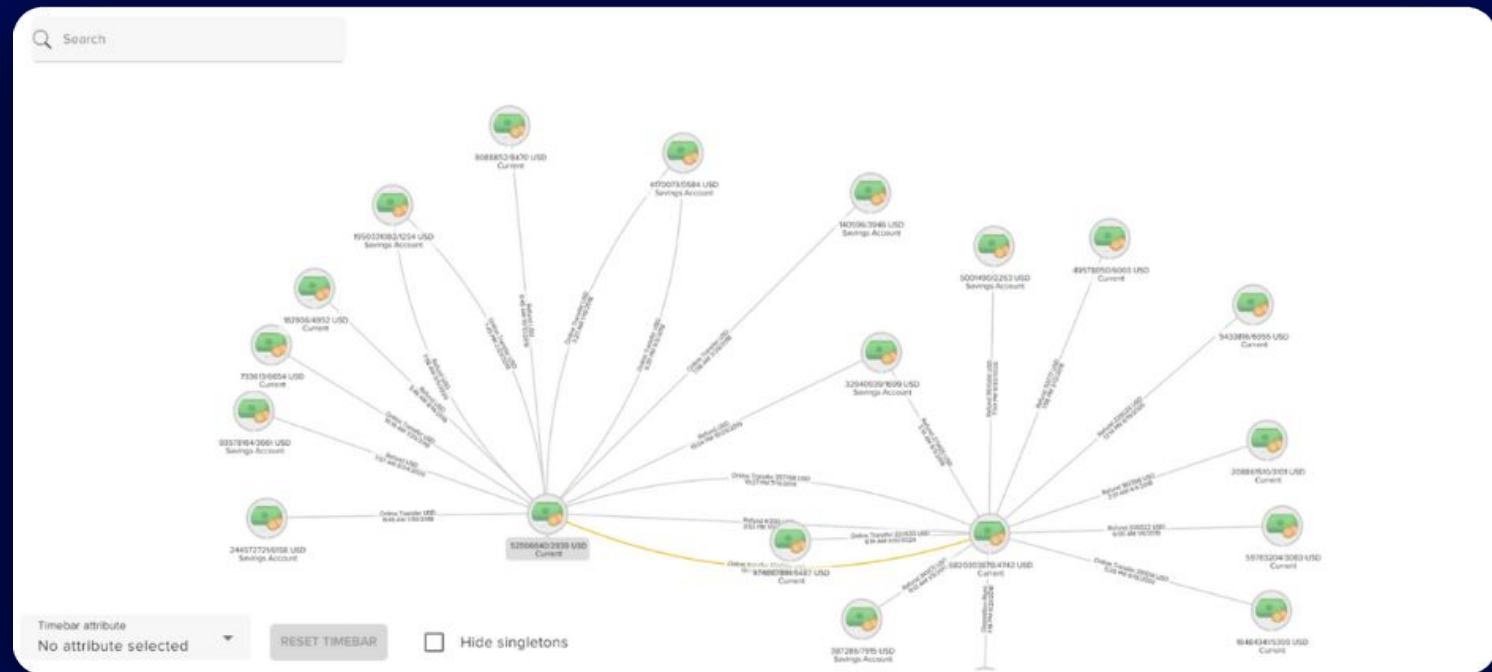
Modified by: Sarah Miller • Detective

Last modified: 04/21/2023 16:24 AM

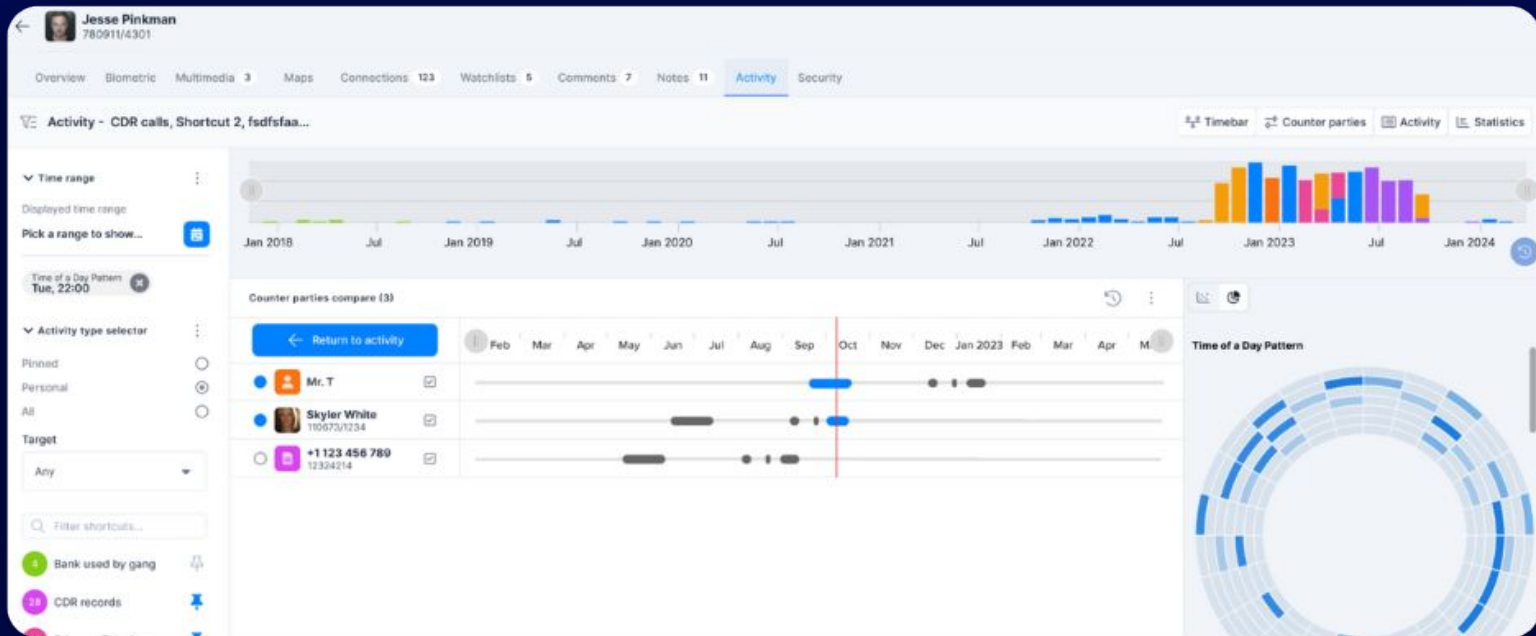
Reporting



Link analysis



Activity view



Application of AI

- Reasonable utilization of AI
- Carefully considered use case
- Properly planned and tested implementation
- Outputs should be taken into consideration not for granted

Keep The Costs Low

- ❌ Avoid fine-tuning (especially LLMs) - expensive and time consuming operations.
- ✅ Choose models with low inference cost, balance params size.

* Total Estimated On-Premise Costs per Hour:

NVIDIA T4:

- Hardware: \$0.11
- Power: \$0.008
- Cooling: \$0.012
- **Total: ≈ \$0.13 per hour**

8 NVIDIA A100s:

- Hardware: \$3.66
- Power: \$0.29
- Cooling: \$0.44
- **Total: ≈ \$4.39 per hour**

Tailored To Typical Investigation Questions



Do not stick with just graphical or just text interface.



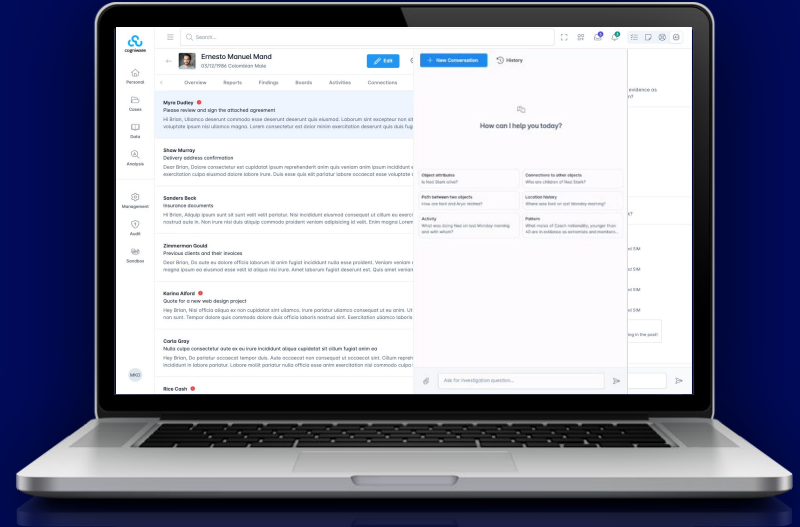
Use different UIs to represent results.



Highlight source of data in response.



Interconnect your other application features with chatbot interface.



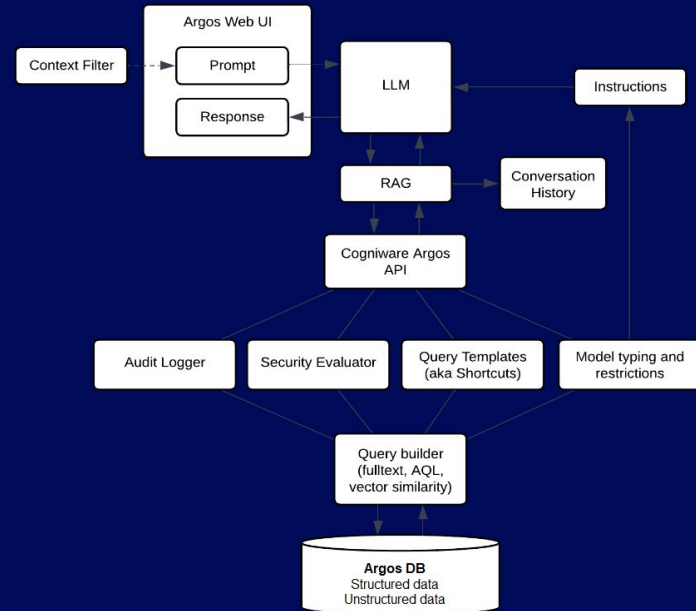
Use RAG (Retrieval Augmented Generation)







Do not use pre-trained knowledge of LLM models.





Use LLMs only for building data queries and use interpretation of in-context data.



Instruct Properly

-  Do not let the system to be creative.
-  Use prompt engineering tactics.
-  Always reference source of your data in AI outputs.
-  Use feedback loops and prompt enhancements to ensure response.

Be AI Agnostic

-  Do not rely on specific model in general (e.g. LLM).
-  Use open architecture.

Benefits

Focused On Improving Key Performance Metrics with AI

Added Value For End Users

Understand hidden insights in Your internal data or data provided by external stakeholders better and find answers to the investigation questions.



Decrease time to find answers in data by up to 40%

Allowing for faster decision-making and increased efficiency.



Understanding complex data

Creation of a comprehensive view of structured and unstructured data and subsequent decision-making based on the information obtained.



Enable non-tech users (usually 75% of all investigators)

Allow non-tech users to analyze communication data and utilize valuable experts on other important tasks.

We Know Our Craft

We have delivered over 100 projects in cooperation with our trusted partners.

We Are In This Together

We take special care of our customers, fulfilling their requirements and guiding them to the success.

Business Value For Management

Make the operational processes more efficient with scalable and heavily secured software.



Lower TCO By Covering All Investigation Features

Our system spans across multiple dimensions within the prison investigation.



Better Team Performance

More efficient governance and orchestration of analytical tasks in the team using embedded case management.



Knowledge Is Kept Within Organization

Fluctuating employees are not leaving with the knowledge that has not been shared with others.

We Know Our Craft

We have delivered over 100 projects in cooperation with our trusted partners.

We Are In This Together

We take special care of our customers, fulfilling their requirements and guiding them to the success.

Argos: Our AI-Powered Platform For Investigation

Secure and user-friendly data analytics system for security professionals.



Unlocks Your Data For Analysis

Collect and process all key data no matter of their source type or structure (multimedia included).



Lets You Understand Data In Context

Find out more about dangerous individuals and their history, companions, time patterns or locations.



Proactively Uncovers Hidden Insights

Saves time and spots non-trivial findings automatically 24/7.



Q&A

All questions are welcomed

Argos fits any investigation



Suited for all data and investigations

Financial transactions, CDR or CCTV feeds for drug trafficking or general crime investigation



Artificial Intelligence Embedded

Understand structured and unstructured data using built-in AI



Target Markets

Applicable both for governmental and commercial use cases



Team of Professionals

Dedicated team for consultancy, implementation and support

Contact me on:

tomas.tunega@cogniware.com