Yantra Hack'24

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DATA ANALYSIS SOFTWARE FOR FINANCIAL FRAUD

ASTRA

AUTONOMOUS **S**OFTWARE FOR
TRANSACTION **R**ESPONSE AND **A**NALYSIS

Financial Data Analytics Software

1 **Knowledge Graphs and Databases**
- Generated from various datasets
- Contain information about various entities, their relationships and transactions.

2 **Data Collection Phase**

2.1 **Web Scraper**
- Automate data collection from the internet

2.2 **Data Collection Wizard**
- Embedded in the front-end interface
- Enables users to upload datasets

3 **Application Programming Interface**
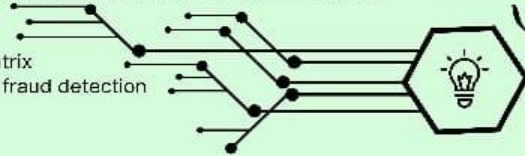- Facilitates all data flow to and from the system

4 **Data Preprocessor**
- Transforms raw datasets and live data-streams, making them suitable for analysis

5 **Deep Learning and Analytics Engine**
- Enables automated data analytics, entity identification, pattern recognition and behaviour modelling
- Manages knowledge graphs
- Responsible for the trust score matrix
- Faciliates anamoly identification & fraud detection

6 **Kubernetes Cluster**
- Monolithic-Microservices Hybrid architecture

Core Engine Gateway
Graphical User Interface Gateway
Kubelet Health & Control Panel
(Limited) Knowledge Graph
Autoencoders & Classifiers
Self Organising Map
Database
Neural Network & Analytics Engine

Various services on each container
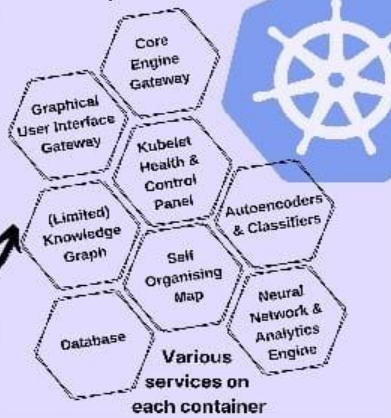
7 **Front-end Interface**
- Enables responsive, interactive knowledge visualisation and reporting
- Real-time interface facilitates enhanced pattern discovery

Data Collection
Internet
Real-time Systems
Other Datasets

Advanced Analytics

Visualisation & Reporting

The Business Model Canvas

Key Partnerships

- Collaborations with banks, financial institutions, and industry experts for feedback and validation
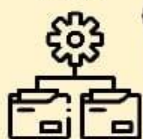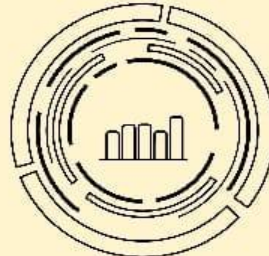- Partnerships with regulatory bodies for staying updated on compliance requirements
- Integration partnerships with other fintech companies for enhancing ASTRA's capabilities

Value Propositions

- Real-time fraud detection and prevention
- Customized solutions for specific business needs
- Scalable and efficient transaction processes
- Regulatory compliance assurance

Key Resources

- Skilled software developers and data scientists for algorithm development
- Sales and marketing team for client acquisition and retention
- Infrastructure for hosting ASTRA's software and handling client data securely

Key Activities

- Research and development for continuous improvement of ASTRA's fraud detection algorithms
- Customization of ASTRA's solutions according to the needs of different clients
- Marketing and sales efforts to acquire new clients and retain existing ones

Customer Segments

- Banks
- Credit rating entities
- Financial institutions

Channels

- Direct sales team targeting key decision-makers in banks and financial institutions
- Industry conferences and events for networking and lead generation
- Online marketing campaigns targeting relevant industry professionals

Customer Relationships

- Personalized account management for key clients
- Continuous customer support and troubleshooting
- Feedback mechanisms to incorporate client suggestions for product improvement

Cost Structure

- Research and development costs for algorithm enhancement
- Employee salaries and benefits
- Infrastructure costs for hosting and maintaining ASTRA's software
- Marketing and sales expenses
- Compliance and regulatory costs

Revenue Streams

- Subscription-based model for access to ASTRA's services
- Tiered pricing based on the scale of operations and level of customization required
- Potential additional revenue from consulting services for regulatory compliance and fraud prevention strategies

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