ethogram.io

Beyond Facial Recognition: Behavioural Analytics for High-Security Environments

Identifying risk, coordination, and deception where faces and IDs fail

Backed by:

austria wirtschafts service aws

PROBLEM

High-risk behaviour goes undetected where faces are obscured, identification is restricted, cameras are limited, and human monitoring is expensive, inconsistent, and understaffed

1. High-risk behaviour detected too late
2. Remote psycho-profiling is almost impossible today
3. Faces obscured break existing identification systems
4. Disguises defeat facial re-identification technologies
5. Behavioural changes remain unnoticed over time
6. Group coordination and intent stay undetected
7. Crowd dynamics are poorly analysed
8. Manual video review does not scale
9. Human monitoring is time-consuming, inconsistent, understaffed
10. No insight into intent or psycho-type

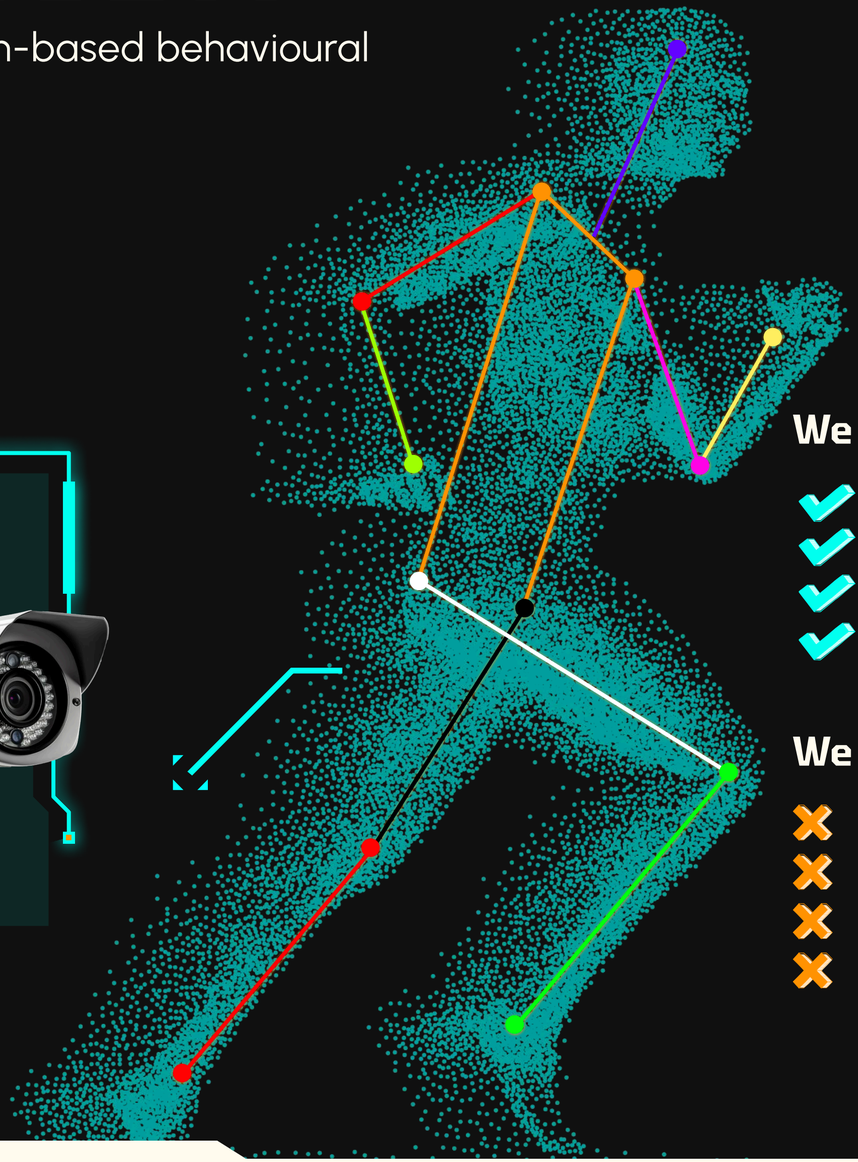
Existing Approach	Why It Fails
Facial recognition	Faces hidden, banned, spoofed
Traditional CCTV	Reactive, operator fatigue
Gait-only systems	Too narrow, brittle
Human observers	Expensive, inconsistent

Technology	Psycho-type Prediction	Abnormal Behaviour	Coordinated Activity	Identification Re-ID	AI Forensics/ Incident triage
Ethogramio	YES	YES	YES	YES	YES
Gait recognition	NO	POSSIBLE	POSSIBLE	YES	POSSIBLE
Facial recognition	NO	NO	NO	YES	POSSIBLE
CCTV	NO	NO	POSSIBLE	NO	NO

SOLUTION

Ethogramio is a motion-based behavioural analytics platform

CCTV / LiDAR, edge-first deployments



We use:

- ✔ Body motion
- ✔ Gestures
- ✔ Behavioural patterns
- ✔ Anthropometry

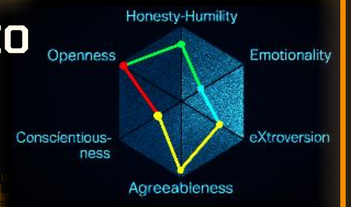
We do not use:

- ✘ Facial recognition
- ✘ Finger print
- ✘ Iris scan
- ✘ RFID

DATA PROCESSING

FRAMES PREPROCESSING
HUMAN DETECTION
KEYPOINT EXTRACTION
FEATURES EXTRACTION
SCORES REGRESSION
PREDICTION RESULTS

ETHOGRAMIO MOTION PROFILE



HOW IT WORKS:

DATA INPUT

- Pose & motion extraction
- Motion normalisation
- Feature aggregation
- Risk / anomaly inference

OUTPUT

- Human review loop*

This is decision support, not automated enforcement

By analysing both spatial and temporal data, motion patterns, gestures, and interactions, we can enhance public and national security through:

- **Detecting potentially threatening individuals**
- **Identifying disguised or avoiding CCTV individuals**
- **Real-time flagging of suspicious behaviour**
- **Identifying silent victims of trauma or abuse**

Targeted in our next stage of development:

- Detecting hidden carrying of guns, knives, or machetes
- Identifying group formations and coordinated activities
- Covering CCTV blind spots using LiDAR data

BEACHHEAD MARKET

Our initial focus on high-monitored environments, such as penitentiary institutions and casinos. These controlled industries are crucial for the effective data collection, training and refining ML models at early stage.

The United States hosts the world's largest prison infrastructure, with over 1.9 million inmates across more than **4,000 facilities**, including state and federal prisons, local jails, and detention centres.

In Europe, there are **960 penitentiary institutions** across 14 developed countries, plus **138 in the UK**, totalling 1,096 facilities with average annual cost of €71,615 per prisoner, demonstrating strong and recurring public-sector budgets. The largest prison administration budgets include the UK (€4.33 billion), Germany (€3.85 billion), and France (€3.09 billion). Countries such as Norway, Denmark, and Sweden, with **per-inmate** spending **exceeding €100,000 per year**, show a clear opportunity to invest in advanced safety, surveillance, and staff-efficiency solutions.

CASINOS - SECOND VERTICAL WITH SIMILAR DYNAMICS:
According to IMARC Group, the casino management systems market, which bundles surveillance/ VMS integrations and analytics, is projected to grow from $9.1B in 2024 to $20.9B by 2033, representing a **CAGR of 9.6%**. Other sources expect a **CAGR of around 13%** over the same period.

With around **490 commercial casinos** and numerous tribal casinos, the U.S. market offers significant potential. The American Gaming Association's latest State of the States report highlights a nationwide increase in commercial gaming revenue of 7.5% year-on-year to $72.04 bn.

TAM

TAM Calculation (adjusted to avoid double-counting):

Video Analytics ($12.3B)
+VMS augmentable ($5B)
+ Facial Recognition augmentation ($1.7B)
+ Behavioural Biometrics ($3.1B)
+ Gait Analysis ($0.8B) ≈ **$22.9B global TAM**

SAM

In the USA, there are 4,780 penitentiary institutions (state, federal, and local). Assuming an average of 100 cameras per facility, this results in approximately 478,000 cameras in total, or 95,600 licences under the 1-per-5 model, yielding a US SAM of **€239M**.

In the US alone, there are 492 commercial casinos in operation. Assuming an average of 1,000 cameras per casino, this equates to nearly 500,000 cameras nationwide, or 100,000 licences under the same 1-per-5 model. At €2,500 per licence per year, the US casino SAM is approximately **€250M**.

SOM

Based on conservative assumptions, Ethogramio's initial **SOM is set at €30M**, representing a realistic early-stage penetration level. (~5% of the SAM)

GO-TO-MARKET

1. PILOT

Objective: Test the prototype on a small set of cameras.
Realistic sales cycle: 2–4 months to get pilot approved. Security director usually greenlights a pilot, but approvals often involve budget sign-off.
Pilot duration: 4-6 months.
Decision makers: Head of Security / Risk Manager / Director of Prisons

2. OPERATOR VALIDATION

Objective: Frontline operators verify accuracy and usability.
Realistic sales cycle: 4-6 months. Usually shorter because pilot is already underway; it's mostly formal approval of results.
Decision makers: Head of Security / CIO

3. ANNUAL LICENCE PER CAMERA CLUSTER

Objective: Scale the solution to a cluster of cameras.
Realistic sales cycle: 6-8 months. Budget approval needed at CIO level; may involve procurement contracts.
Decision makers: CIO / Director of Prisons / Ministry (if government)

4. MULTI-SITE EXPANSION

Objective: Enterprise rollout across multiple locations.
Realistic sales cycle: 8-12 months. This often requires executive approval, procurement contracts, and sometimes integration testing at multiple sites.
Decision makers: CIO / Ministry / Corporate Security Head

COMPETITION

FACIAL RECOGNITION

There are multiple companies providing Facial Recognition for surveillance, identification and tracking. For example - **Clearview AI**. However, all of these products rely solely on facial data and fail when the face cannot be scanned.

PEOPLE COUNTING TECHNOLOGIES

Several companies provide recognition and tracking based solely on physical attributes, such as clothing type and colour or body shape. As an example - **People Tracker** by CyberLink.

ETHOGRAMIO

Ethogramio defines a **new category** rather than a single feature. It is the first system to integrate motion-based behavioural intelligence with psychological profiling, alongside group and coordinated activity analysis, thereby creating a predictive and proactive surveillance layer.

CCTV-BASED GAIT RECOGNITION

Projects such as **PopEye** (AIT), **BRIAR** (IARPA), **TENSOR** (Horizon EU), have advanced gait recognition into a viable identification tool, primarily used for re-identification across surveillance networks and video-data sources.

GAIT PROFILING

One of the closest comparable products on the market is **Watrix**, a Chinese company specialising in gait profiling and person identification. In 2021, they received $42 million in funding and currently provide services to the Beijing Police.

TRACTION & VALIDATION

INSTITUTIONAL VALIDATION

1. **Company incorporated**

Ethogramio registered as an Austrian FlexCo, with all prior IP formally transferred to the company.

2. **Government-backed technical and commercial validation**

A non-dilutive **€267,000 grant** awarded by Austria Wirtschaftsservice (aws). Grant awarded following technical and commercial review.

aws austria wirtschaftsservice

3. **Financial planning completed**

Multi-year financial model including break-even analysis, licensing assumptions, and scaling scenarios.

4. **Board of advisors formed**

Advisors in security, behavioural science, and GovTech procurement engaged.

MARKET PULL

1. **Market research completed for core verticals**

In-depth analysis of penitentiary systems and casinos across the EU, UK, and US.

2. **Early adopter profiles and user stories defined**

Concrete use cases identified, including incident triage, behavioural anomaly detection, group dynamics analysis, and psychological profiling. Insights were gathered during the International Workshop on Prison Officers through interviews with officers and managers from Scotland, England, the Netherlands, Australia, and Austria.

3. **Inbound interest from target users**

Informal confirmations have been received from the Austrian Federal Ministry of Justice and the Scottish Prison Service to test the prototype on their premises.

The CCTV Mobile Unit of the Police of Wales has also expressed interest in testing the system once the prototype is ready.

TECHNOLOGY READINESS

1. **Proof of Concept completed**

A functional PoC demonstrating body-motion extraction from CCTV footage and early behavioural feature mapping. Technical report available under NDA.

2. **Core technical architecture defined**

End-to-end system design covering data ingestion, motion normalisation, pose estimation pipeline, feature extraction, model training, and output layers.

3. **Initial R&D roadmap and product plan developed**

Clear transition path from PoC → prototype → MVP → product stage.

4. **Key hires and scaling plan defined**

Core roles identified, with preliminary candidate alignment and a structured ramp-up plan to 20 employees.

FUNDING ASK

We are raising a **€200,000 angel round** to complement the €267,000 non-dilutive grant already secured from Austria Wirtschaftsservice.

Ethogramio is valued at €6 million pre-money. We're opening this round for individual investments ranging from a minimum of €50,000 to a maximum of €200,000.

This round funds a production-grade prototype and 2–3 pilots, positioning the company for a €1.5–3M seed round.

Amount raised: **€267,000**
Valuation: **€6,000,000**
Minimum ticket: **€50,000**
Use of funds: **prototype and pilots**

JTBD Forecast

EURO \ Period		1Y Q1	1Y Q2	1Y Q3	1Y Q4	2Y Q1	2Y Q2	2Y Q3	2Y Q4	3Y Q1	3Y Q2	3Y Q3	3Y Q4	4Y Q1	4Y Q2
Revenue				€ -	€ 7,500	€ 15,000	€ 150,000	€ 375,000	€ 1,500,000	€ 2,625,000	€ 3,750,000	€ 7,500,000	€ 12,750,000	€ 18,750,000	€ 26,250,000
Capital Expenses		€ 14,500	€ 14,500	€ 14,500	€ 14,500	€ 5,000	€ 45,000	€ 75,000	€ 375,000	€ 375,000	€ 375,000	€ 1,250,000	€ 1,750,000	€ 2,000,000	€ 2,500,000
Operational Expenses		€ 98,000	€ 98,000	€ 98,000	€ 98,000	€ 606,756	€ 606,756	€ 606,756	€ 606,756	€ 956,316	€ 956,316	€ 956,316	€ 956,316	€ 1,081,394	€ 1,081,394
Pricing per 1 licence	Price/month														
Ethogramio System (up to 5 cameras)	€ 2,500.00	0	0	0	1	2	20	50	200	350	500	1000	1700	2500	3500
Profit / Loss		-€ 112,500	-€ 112,500	-€ 112,500	-€ 105,000	-€ 596,756	-€ 501,756	-€ 306,756	€ 518,245	€ 1,293,684	€ 2,418,684	€ 5,293,684	€ 10,043,684	€ 15,668,606	€ 22,668,606
Investments		Pre-seed EUR 450,000				Seed EUR 3M									
		Prototyping				MVP Development, Market Entry									

The following table contains JTBD (Jobs To Be Done) forecast data for the first target customer profile - penitentiary institutions.

PROTOTYPING PHASE

We expect to achieve the following results:

1. Functional Prototype.
2. Refined Models: predicting scores, with 90+% MAE
3. Data Security: in accordance with the EU AI Act
4. A fully integrated system that includes video preprocessing, human detection model, body landmarks extraction model, movement features extraction, psychotype scores prediction model

Ethogramio - Prototype

		Jan-26	Feb-26	Mar-26	Apr-26	May-26	Jun-26	Jul-26	Aug-26	Sept-26	Oct-26	Nov-26	Dec-26	Jan-27	Feb-27
				m											
Milestone 1	**Project Initiation & Operational Setup**														
	1.1. Finalising funding agreements.	x													
	1.2. Hiring and onboarding team members and contracting advisors or compliance officers.	x	x	x											
	1.3. Purchasing hardware/workstations. Setting up office and secure data-processing rooms.		x	x											
Milestone 2	**Data acquisition and Preprocessing**									m					
	[illegible]			x	x	x	x	x	x	x					
	[illegible]					x	x								
	[illegible]				x	x	x								
	[illegible]					x	x								
Milestone 3	**Compliance, Market Research and Early-Adopter Engagement**											m			
	[illegible]			x	x	x	x								
	[illegible]			x	x	x	x								
	[illegible]							x	x	x					
	[illegible]									x	x	x			
Milestone 4	**Motion Extraction and Behaviour-Personality Models**														m
	[illegible]				x	x	x								
	[illegible]					x	x	x	x	x	x	x			
	[illegible]								x	x	x	x	x	x	
	[illegible]									x	x	x	x	x	x

PRODUCT PLAN

(NOW)PROTOTYPING PHASE :

Our key priorities are:

1. To develop and validate a working prototype through testing in real operational environments, and
2. To transition from pre-seed to seed stage by securing follow-on funding, combining the next Austria Wirtschaftsservice (AWS) grant with venture capital investment.

YEAR ONE:

Build and test the MVP of the system with basic functionality.

YEAR TWO:

Market entry with a basic-functionality product. Using the MVP stage data and early adopter feedback on functionality and user experience, build three modules: Psychotype, Body-Motion, and Anthropometry.

YEAR THREE:

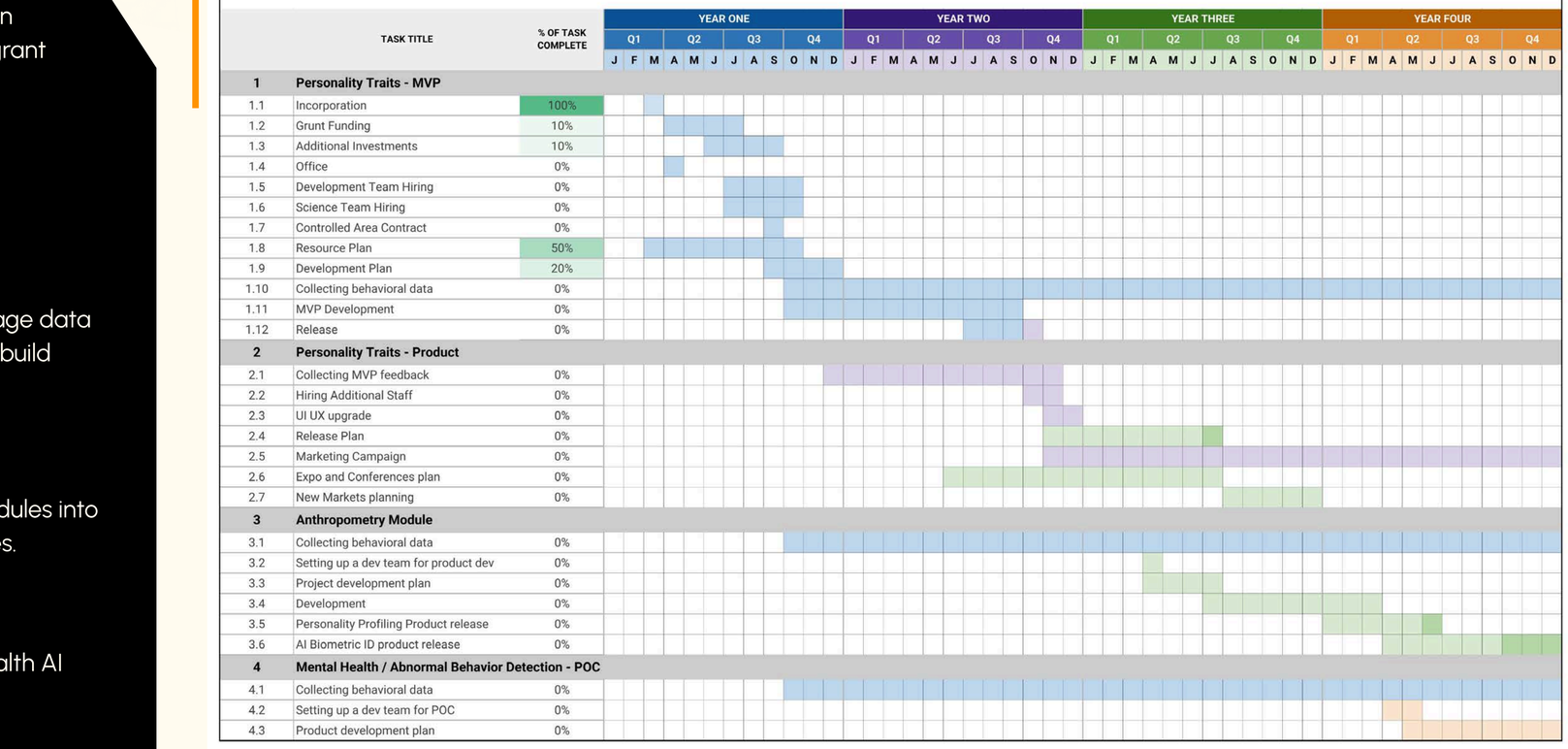
Develop desktop and web apps, user's page, and integrate all modules into a single holistic system - the Personality Profile. Start full-scale sales.

YEAR FOUR:

Initiate development of additional modules such as the Mental Health AI Checker, AI Drone Operator, and Retail Mass Analysis.

ethogramio - product plan

	TASK TITLE	% OF TASK COMPLETE
1	**Personality Traits - MVP**	
1.1	Incorporation	100%
1.2	Grunt Funding	10%
1.3	Additional Investments	10%
1.4	Office	0%
1.5	Development Team Hiring	0%
1.6	Science Team Hiring	0%
1.7	Controlled Area Contract	0%
1.8	Resource Plan	50%
1.9	Development Plan	20%
1.10	Collecting behavioral data	0%
1.11	MVP Development	0%
1.12	Release	0%
2	**Personality Traits - Product**	
2.1	Collecting MVP feedback	0%
2.2	Hiring Additional Staff	0%
2.3	UI UX upgrade	0%
2.4	Release Plan	0%
2.5	Marketing Campaign	0%
2.6	Expo and Conferences plan	0%
2.7	New Markets planning	0%
3	**Anthropometry Module**	
3.1	Collecting behavioral data	0%
3.2	Setting up a dev team for product dev	0%
3.3	Project development plan	0%
3.4	Development	0%
3.5	Personality Profiling Product release	0%
3.6	AI Biometric ID product release	0%
4	**Mental Health / Abnormal Behavior Detection - POC**	
4.1	Collecting behavioral data	0%
4.2	Setting up a dev team for POC	0%
4.3	Product development plan	0%



TEAM

TEAM COMPOSITION:

CHRISTOPH CREPAZ

CEO
CO-FOUNDER

MANAGEMENT

INNOVATION

BUSINESS NETWORKING

KYRYLO YEVGLYEVSKIY

CPO
CO-FOUNDER

APPLIED PSYCHOLOGY

DATA SCIENCE

PRODUCT DEVELOPMENT

DR. ROMAN B.

CTO
CO-FOUNDER

TECHNICAL LEADERSHIP

EMBEDDED SYSTEMS

COMPUTER VISION & MACHINE LEARNING

KEY HIRES:

- ML ENGINEER
- COMPUTER VISION ENGINEER
- DATA SCIENTIST
- PSYCHOLOGIST

CHRISTOPH CREPAZ, CO-FOUNDER, CEO
Dynamic professional with multidisciplinary expertise and Co-Founder of Ethogramio FlexCo. As a serial entrepreneur, experienced executive, and Austrian diplomat to the UK, he brings an exceptional political and business network that will be instrumental in driving strategic partnerships and sales growth.

KYRYLO YEVGLYEVSKIY, CO-FOUNDER, CPO
The originator of the Ethogramio concept, he leads the behavioural intelligence and profiling direction of the project. Kyrylo focuses on translating behavioural science into computational models, bridging motion analysis, psychological theory, and real-world security use cases.

ROMAN B., PHD, CO-FOUNDER, CTO
Roman has been the technical lead of Ethogramio since its earliest conceptual stage. As an experienced AI specialist with deep expertise in machine learning, computer vision, and full-cycle product development, he currently holds a leadership role at a "GAFAM" company.

KEY HIRES:

DATA SCIENTIST (PREFERRED CANDIDATE IDENTIFIED)
Responsible for structuring, analysing, and validating large-scale behavioural datasets derived from video and LiDAR sources.

COMPUTER VISION ENGINEER (VERBAL AGREEMENT)
Develops and optimises the video and sensor processing pipeline. This includes pose estimation, skeleton extraction, motion normalisation, and robustness across camera angles, lighting conditions, occlusions, and sensor types.

MACHINE LEARNING ENGINEER (VERBAL AGREEMENT)
Designs, trains, and deploys models that map body-motion features to behavioural and personality representations.

PSYCHOLOGIST (PREFERRED CANDIDATE IDENTIFIED)
Defines behavioural and personality frameworks (e.g. HEXACO), supports annotation strategies, and validates the interpretation of model outputs.

ADVISORY BOARD:

DR. ANDREAS ALTMANN
ECONOMIST
MCI MANAGEMENT CENTER INNSBRUCK

MANAGEMENT, INNOVATION, GOVERNANCE

DR. MALCOLM ATKINSON
EMERITUS PROFESSOR,
SCHOOL OF INFORMATICS
THE UNIVERSITY OF EDINBURGH

E-SCIENCE, BIOMEDICAL ARTIFICIAL INTELLIGENCE, DATA-INTENSIVE SYSTEMS

GEORGE MACKINTOSH
SERIAL ENTREPRENEUR
BACKED BY LEADING VCS WITH MULTIPLE SUCCESSFUL EXITS

START-UPS, AI, ENTREPRENEURSHIP

DR. PETER NEUMANN
PROFESSOR OF SECURITY STUDIES,
KING'S COLLEGE LONDON,
ADVISOR TO THE UN AND OSCE

RADICALISATION, TERRORISM AND INTELLIGENCE

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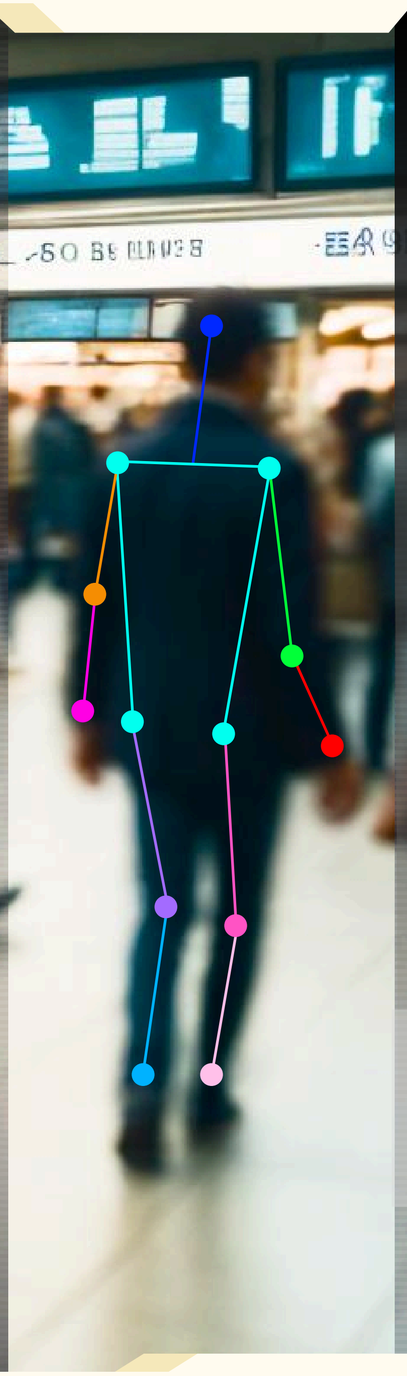

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