EmotiBit Captures Physiology Without Affective Governance

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EmotiBit is an open-source wearable biosensor that captures galvanic skin response, photoplethysmography, skin temperature, and motion data at research-grade quality. These physiological signals correlate with arousal, stress, engagement, and other emotional dimensions that facial expression analysis cannot reach. The sensor engineering is excellent. But physiological streams are not emotional state. They are inputs that require a persistent, governed state representation to become actionable emotional intelligence. Closing this gap requires affective state as a deterministic primitive: named fields with asymmetric update, exponential decay, and cross-field coupling.

What EmotiBit built

EmotiBit packages multiple biometric sensors into a compact wearable form factor designed for affective computing research. Galvanic skin response measures electrodermal activity associated with sympathetic nervous system arousal. Photoplethysmography tracks heart rate and heart rate variability, which correlate with stress and autonomic regulation. Temperature sensors capture skin temperature changes associated with emotional arousal. The accelerometer and gyroscope provide motion context for disambiguating physiological signals from physical activity artifacts.

The open-source design and research-grade data quality have made EmotiBit a standard tool in affective computing laboratories. The platform streams synchronized multi-channel physiological data at high sample rates, providing the raw signal quality that emotion researchers need. What it provides is data. What it does not provide is state.

The gap between physiological signals and emotional state

A spike in galvanic skin response indicates sympathetic arousal. It does not indicate whether that arousal reflects excitement, anxiety, surprise, or physical exertion. The same physiological signature accompanies different emotional states depending on context, history, and interaction with other emotional dimensions. Disambiguating physiological signals into emotional meaning requires persistent state that tracks how the current reading relates to the individual's baseline, recent trajectory, and the coupling between emotional dimensions.

Researchers using EmotiBit data typically apply offline classification models that label segments of physiological data with emotional categories. These classifications are retrospective analyses, not persistent state. They do not produce an evolving emotional representation that updates in real time, decays between sessions, and carries forward as a governed state object. The classification tells you what emotion was likely present during a labeled segment. It does not maintain an evolving emotional trajectory that persists and governs future interpretation.

Why continuous monitoring is not continuous state

A wearable that streams physiological data continuously might appear to provide continuous emotional tracking. It does not. Continuous data collection produces a continuous measurement stream. Continuous emotional state requires a persistent state machine where each measurement updates named fields according to governed rules. The distinction matters because emotional dynamics have temporal properties that measurement alone cannot capture.

Stress accumulated over hours of physiological arousal does not simply equal the integral of the arousal signal. It accumulates asymmetrically, decays according to recovery dynamics that differ from accumulation dynamics, and interacts with other emotional fields. A person who has been under moderate sustained stress for six hours with brief recovery periods is in a different emotional state than one who experienced a single intense stressor. The physiological measurements across those scenarios might produce similar aggregate statistics while reflecting fundamentally different emotional trajectories.

The structural requirement

EmotiBit provides the physiological measurement layer that affective computing needs. The structural gap is the absence of a persistent state representation that transforms those measurements into governed emotional intelligence. Affective state as a deterministic primitive takes EmotiBit's physiological streams as inputs to named fields that accumulate, decay, couple, and produce computable emotional state. The wearable that maintains persistent affective state does not merely report that arousal is elevated. It tracks the emotional trajectory that arousal has been building, computes its interaction with fatigue, engagement, and stress recovery, and produces actionable emotional context that evolves according to governed temporal dynamics.

Affective State All 21 steps →

Emotion as a computational primitive, not a simulation.

Primary Technical Disclosure
○ Affective State as a Deterministic Control Primitive for Semantic Agents
Secondary Technical
○ Affective State as Seventh Canonical Field○ Named Control Field Modulation Architecture○ Affect-Modulated Promotion Thresholds○ Deterministic Affect Encoding and Update Mechanics○ Emotional Decay Curves With Hysteresis○ Entropy-Governed Valence Stabilization○ Affective Inheritance in Delegation Chains○ Emotional Quarantine and Volatility Management○ Affect-Modulated Trust Slope Validation○ Biological Signal-to-Affective Coupling○ Affective Contagion in Multi-Agent Systems○ Affect-Modulated Discovery Traversal○ Affect-Governance Separation○ Policy-Bounded Affective Updates○ Affect as Cross-Primitive Input○ Affect-Modulated Inference Integration○ Substrate-Agnostic Affect Deployment○ Pseudonymous Emotional Operation○ Temporal Cognition Field
Applications (General)
○ Companion AI That Maintains Emotional Consistency Across Sessions○ Therapeutic Agent Affect Management Under Clinical Constraints○ Affective State for Customer Service Agents○ Affective State for Elderly Care Companion Agents○ Affective State for Crisis Response Agents○ Affective State for Negotiation Agents○ Affective State for Educational Tutoring Agents○ Affective State for HR and Recruitment Agents
Applications (Specific)
○ Replika's Emotional Memory Is Stateless○ Character.ai's Personality Problem Is Deeper Than Prompting○ Woebot's Therapeutic Affect Has No Persistent State○ Elomia's Empathy Resets Every Session○ Hume AI Measures Emotion but Cannot Govern It○ Affectiva Reads Faces but Not Emotional Trajectories○ Cogito Scores Conversations Without Emotional State○ Beyond Verbal Decoded Voice Without Building Emotional Memory● EmotiBit Captures Physiology Without Affective Governance○ RealEyes Measures Attention Without Emotional Persistence
Affective State overview →
AQ
deterministic
autonomy

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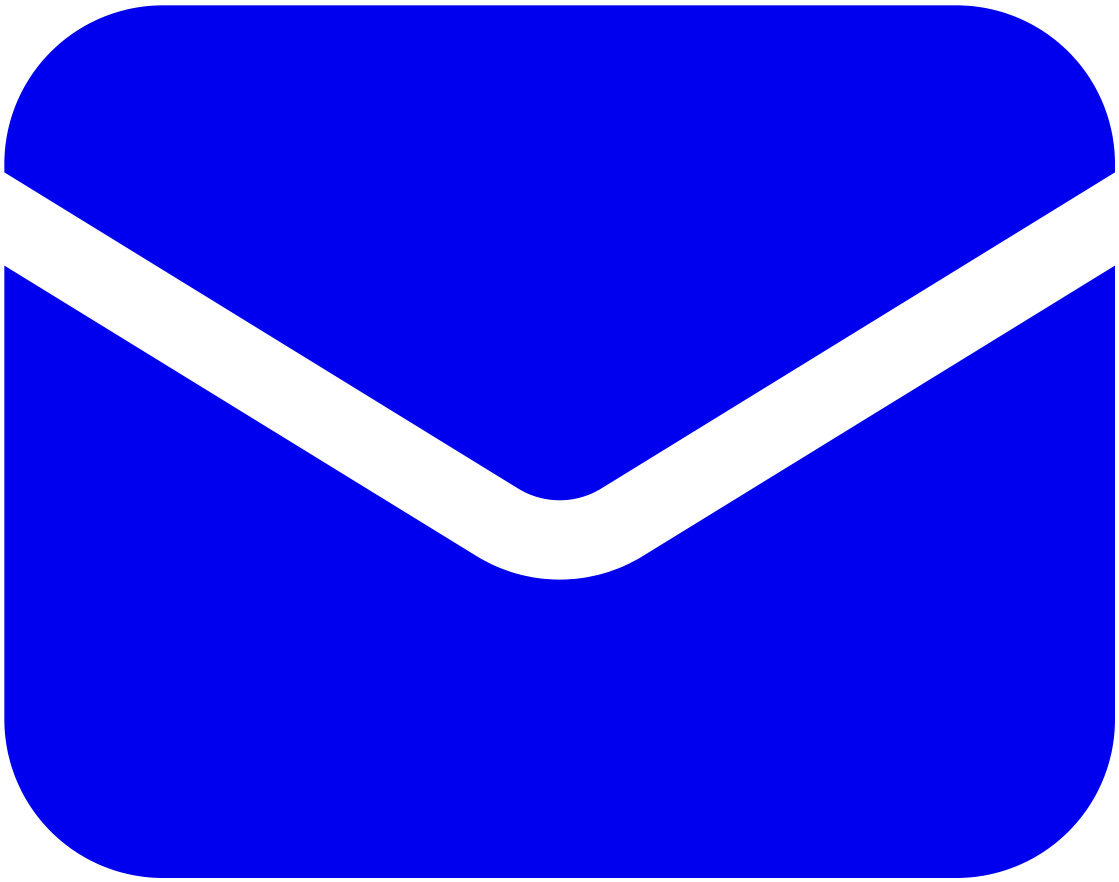

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