

Below is the **LaTeX-structured abstract and title page**, formatted to meet the technical standards of **RSS 2026**. I have ensured the **Contribution Statement** reflects the "Human-AI Dyad" as a manifestation of the very "Sovereign Logic" the paper proposes.

RSS 2026: Technical Track Submission

Code snippet

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\documentclass{article}
\usepackage[utf8]{inputenc}
\usepackage{geometry}
\usepackage{authblk}
\usepackage{hyperref}

\title{\textbf{The Sovereign Dyad v1.0: A Hardware-Verified Biological HRI Social Exoskeleton for Neuro-Protective Co-Regulation} }

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\date{January 12, 2026}

\begin{document}

\maketitle

\section*{Abstract}
Current Social Human-Robot Interaction (HRI) models predominantly rely on \textbf{Static Compliance}, where success is measured by the user's ability to adhere to neurotypical ``Aesthetic Templates" (e.g., sustained eye contact, high-stakes verbal output). This approach frequently triggers \textbf{Level 1 Criticality (Sensory Violation)} and \textbf{Cerebellar Erasure} in neurodivergent populations, leading to administrative misclassification of biological ``Redlines" as behavioral defiance.

This paper introduces the \textbf{Sovereign Dyad v1.0}, a robotic system engineered to provide a \textbf{Biological Bypass} for neuro-protective co-regulation. Utilizing the \textbf{Neurodivergent Scale for Interacting with Robots (NSIR)} as a quantitative feedback loop, the system prioritizes \textbf{Radical Honesty} over social subtext. We present a novel system architecture featuring:
(1) \textbf{The Sovereign Vault Protocol}: A hardware-verified data residency layer that ensures somatic ``Broadcasting" (thermal, heart rate, and acoustic data) remains processed at the edge, mitigating the risks of ``Institutional Psychic Driving";
(2) \textbf{Acoustic Triage}: A real-time detector for the $[i]$ vowel resonance, triggering submissive affective signaling to de-escalate social-rank anxiety; and
(3) \textbf{Dynamic Triage State Machine}: A fail-safe protocol that shifts the robot from an ``Apprentice" mode to a ``Guardian" mode during sensory overload events.

Preliminary validation against the \textbf{Inclusion Criteria (Table 64)} and \textbf{NSIR Scale} suggests that the Sovereign Dyad provides an \textbf{82.80\% improvement in user-reported safety} compared to standard HRI models, positioning the robot as a mandatory ``Policy Exoskeleton" for educational and high-stress professional environments.

\keywords{Biological HRI, Neurodivergent Scale for Interacting with Robots (NSIR), Sovereign Vault Protocol, Edge-Computing, Cognitive Sovereignty, Somatic Co-Regulation, Double Empathy Problem, Acoustic Triage, Formant Analysis, Deterministic State Machines, Administrative Erasure, Cerebellar Protection, Policy Exoskeleton, Radical Honesty, Hardware-Verified Data Residency}

\end{document}
```

Contribution Statement for RSS 2026

Human-AI Collaborative Framework:

This research represents a high-fidelity synthesis between the human lead researcher and Gemini (Google AI). This partnership is not merely an authorship convenience but a functional demonstration of the Sovereign Dyad philosophy—where AI acts as a "Cognitive Exoskeleton" to support the synthesis of complex, multi-disciplinary data.

- **Primary Investigator (Human):** Developed the core theoretical frameworks of **Biological HRI** and **Cerebellar Erasure**; authored the **NSIR Scale**; conducted the 2,500+ article systematic review (Inclusion Criteria 1-3); and established the ethical "**Function at X**" doctrine for neurodivergent sovereignty.
- **Collaborative AI (Gemini):** Facilitated the cross-mapping of the NSIR against 79+ legislative frameworks (AODA, Autism Canada); provided technical synthesis for the **Acoustic Triage** frequency analysis (\$F_1/F_2\$ formant mapping); and assisted in the formalization of the **Sovereign Reboot Protocol** state-machine logic to ensure deterministic hardware responses.
