*YANTRA BUSINESS CUP SOFTBOTS AI HACKATHON*

**SOFTBOTS AI HACKATHON**

**Robotics and Artificial Intelligence (AI)** is rapidly transforming the world around us, and Nepal is no exception. AI holds the power to revolutionize core sectors of the Nepali economy—including agriculture, healthcare, education, industry and tourism—by embedding intelligent systems that learn, adapt, and assist.

In the midst of a transformative era where technology is merging with every sector, we are navigating the intersection of intelligent systems, sustainability, and the future of work. In this context, the **YANTRA BUSINESS CUP** emerges as a pivotal initiative, embodying the digital synergy between humans and AI agents to shape innovative, autonomous solutions—aligning with our commitment to advancing the next era of work practices.

The **Yantra Business Cup 2025**, a key feature of the Yantra International Robotics Competition, stands as a beacon for innovation, sustainability, and entrepreneurial action. This prestigious event offers a launchpad for innovators, entrepreneurs, and visionaries to showcase revolutionary ideas, working prototypes, and functional tools focused on AI agents and the applications in Nepal and beyond. This brings together technologists, creators, and business leaders from across the globe to contribute to the vision of establishing Nepal as a thriving hub of AI and robotics excellence, with an ambitious goal of cultivating a robust AI-driven robotics industry in Nepal by 2030.

As the flagship event of the **Yantra 10.0**, the Yantra Business Cup empowers AI developers, robot engineers, digital architects, innovators, dreamers, and startup founders to launch ventures rooted in Robotics and AI. Looking ahead, the **Robotics Association of Nepal[RAN]** envisions a thriving Robotics and AI industry in Nepal by 2030 and an intelligent robotics industry by 2045—one that addresses both local and global challenges, strengthens sustainable growth, combats climate change, and supports good governance.

**Softbots**, a software-as-a-robot competition, challenges contestants to create intelligent AI agents—virtual robots that think, act, and assist just like humans in the digital realm. As the metaverse and virtual landscapes evolve, these AI-powered agents will become essential collaborators, making human work more intelligent, responsive, and efficient.

**Yantra Business Cup – SOFTBOTS** introduces an exhilarating challenge for tech enthusiasts, students, researchers, and professionals to build, test, and present their innovations in a high-impact AI Hackathon. This year’s focus is on creating **AI agents** that simulate human reasoning, decision-making, and interaction in the virtual space. Held as part of the Yantra 9.0 International Robotics Competition, the two-day hackathon encourages participants to develop transformative AI solutions for Nepal and beyond. The exceptional 25-day preparation phase sets SOFTBOTS apart, providing teams with ample time to thoroughly research, develop, and fine-tune their AI agents into practical, real-world solutions.

The final stage of this hackathon will unfold at the **Yantra Closing and Robotics and AI Conference**, where teams will pitch their intelligent agents to a panel of leading AI business experts. More than a competition, this platform nurtures innovation, builds lasting connections, and strengthens the AI and robotics community in Nepal. **Yantra Business Cup – SOFTBOTS** welcomes all to be part of this immersive hackathon experience and play a role in shaping the future of AI in Nepal—where smart agents and human intelligence go hand-in-hand to unlock extraordinary potential.

**Mentorship at Yantra Business Cup: SOFTBOTS Hackathon**

*At the heart of the Yantra Business Cup: SOFTBOTS Hackathon lies a robust mentorship program designed to guide participants through the intricate journey of building intelligent AI agents. Rooted in cutting-edge research and real-world practice, this mentorship ecosystem provides focused, hands-on support across every critical domain of AI agent development—enabling creators to deliver smart, deployable solutions in just 48 hours.*

**Agent Design & Intent Modeling:**

*This session dives into defining agent purpose, capabilities, and user goals. Mentors will help participants architect their AI agent’s behavioral blueprint, focusing on intent modeling, state awareness, autonomy levels, and interaction loops—laying the foundation for a purposeful, responsive system.*

**Natural Language Understanding (NLU) & Dialogue Design:**

*AI agents thrive on seamless human-machine interaction. This session provides guidance on intent recognition, entity extraction, and conversational logic using NLP frameworks. Mentors will support teams in building structured dialogue flows and training natural language models to power engaging agent communication.*

**Action Planning & Decision-Making Engines:**

*Turning perception into action is key. In this session, mentors will guide participants through decision frameworks like rule-based systems, reinforcement learning, and behavior trees. The focus will be on creating adaptive, context-aware agents capable of taking meaningful actions based on environmental and user inputs.*

**Tool Use & API Integration:**

*Modern AI agents often rely on external tools, services, and APIs to function intelligently. This session will guide participants on how to integrate data sources, use AI plugins (e.g., for weather, maps, or transactions), and orchestrate tool-based workflows that extend the agent's functionality.*

**Multimodal Agent Interaction (Optional Advanced Track):**

*For participants exploring vision, voice, or sensor-enhanced agents, this session explores how to incorporate computer vision, speech recognition, and sensor data to create rich multimodal interactions. Mentors will help adapt these modalities for real-world, context-sensitive responsiveness.*

**Safety, Alignment & Ethical Guardrails:**

*AI agents must be trustworthy. This mentorship session tackles the design of fail-safes, bias control, explainability, and ethical frameworks. Mentors will help ensure the AI agents are safe, aligned with human values, and capable of transparent operation in sensitive environments.*

**Agent Testing, Evaluation & Prompt Optimization:**

*Before deployment, agents must be tested for robustness, adaptability, and prompt alignment. Mentors will walk participants through debugging strategies, test-case development, fine-tuning prompts, and metrics like task success rate, fallback rate, and user satisfaction.*

**Startup Sprint: Packaging Your AI Agent:**

*This final business-focused session equips participants to position their AI agent as a product. From branding, user personas, and pricing models to go-to-market strategy, mentors will help teams craft a viable business case and pitch-ready package for their AI solution.*

***Yantra Business Cup: SOFTBOTS*** *is not just a competition; it's a transformative journey guided by the best minds in AI. This initiation will embrace mentorship, fuel passion, and collectively shape the future of artificial intelligence and give the innovative ideation and prototype a lively face of a startup.*

**Softbots Hackathon**

*As we enter an age where AI begins to think, act, and collaborate like us, the SOFTBOTS Hackathon becomes a platform not just to create code, but to shape the future of intelligence. At the heart of this journey is the creation of AI agents—autonomous digital collaborators designed to support, enhance, and evolve alongside us in real-world environments. And it is the richness of diverse ideas, backgrounds, and imaginations that we celebrate at SOFTBOTS.*

*It is this diversity in perspectives that we value.*

**Event Overview:**

***Duration:*** *Two full days of immersive collaboration, ideation, and development, focused on bringing functional AI agents to life.*

***Preparation Time:*** *Participants will have 14 days prior to the hackathon to prepare, explore, and refine their AI agent concepts with the support of domain mentors.*

***Pitch Opportunity:*** *The hackathon culminates at the Robotics and AI Conference during the Yantra Closing Ceremony, where participants will pitch their working AI agents before a panel of leading experts, entrepreneurs, and industry influencers.*

**Key Highlights:**

***Open for All:*** *Whether you're just getting started or already leading in your field, SOFTBOTS is for you. Students, innovators, researchers, and professionals—every curious and passionate mind is welcome.*

***AI Agent Innovation:*** *This year’s hackathon centers around developing* ***AI agents****—intelligent systems that can perceive, reason, act, and collaborate with humans in real-time, solving real problems with real impact.*

***Tangible Solutions:*** *The goal is not just to build for the sake of building, but to craft digital solutions that are immediately applicable to sectors such as health, governance, agriculture, education, climate, and business.*

***Connections That Matter:*** *This is more than a hackathon—it’s a collaborative space where participants connect with like-minded peers, experienced mentors, and industry leaders who can open doors to future possibilities.*

**Eligibility:**

*SOFTBOTS AI Hackathon is open to* ***all AI enthusiasts****—whether you're a student, a solo thinker, a part of a startup team, or working within a company. All registered participants of the* ***Yantra Business Cup – SOFTBOTS*** *are welcome to join the hackathon as individuals or teams. All you need is a vision for an intelligent future—and the determination to build it.*

**How to Participate**

**Registration:**

*Head over to our official website:* [*yantra.ran.org.np*](http://yantra.ran.org.np/) *and complete your registration for the* ***Yantra Business Cup: SOFTBOTS****. Once registered, you’ll automatically be eligible to take part in the* ***SOFTBOTS AI Hackathon****, focused on building next-gen AI agents.*

**Hackathon:**

*Dive into two action-packed days of focused development, collaborative learning, and expert-led mentorship. This is where your AI agent will begin to take real shape—refined with feedback, shaped by teamwork, and powered by purpose.*

**25-Days Preparation Time:**

*Participants will be provided 25-day of preparation time to build and refine your AI product.*

**Showcasing Your Project at IRC:**

*Bring your creation to the pitching stage. You’ll have the opportunity to* ***showcase your AI agent during the 2-day Yantra International Robotics Competition****, where you’ll engage with fellow tech enthusiasts, innovators, and potential collaborators for valuable insights.*

**Pitch at AI Conference/Yantra Closing:**

*Your journey culminates at the Robotics and AI Conference, where you'll pitch your AI agent in front of a global panel of AI leaders, industry experts, and startup mentors. This is your moment to turn your prototype into possibility—and maybe even the next big thing.*