Generative AI for Games

CES Editor's Day 2025 Session 4

Seth Schneider | Director of Product Management, NVIDIA ACE, NVIDIA

The Future of Games is a Living World

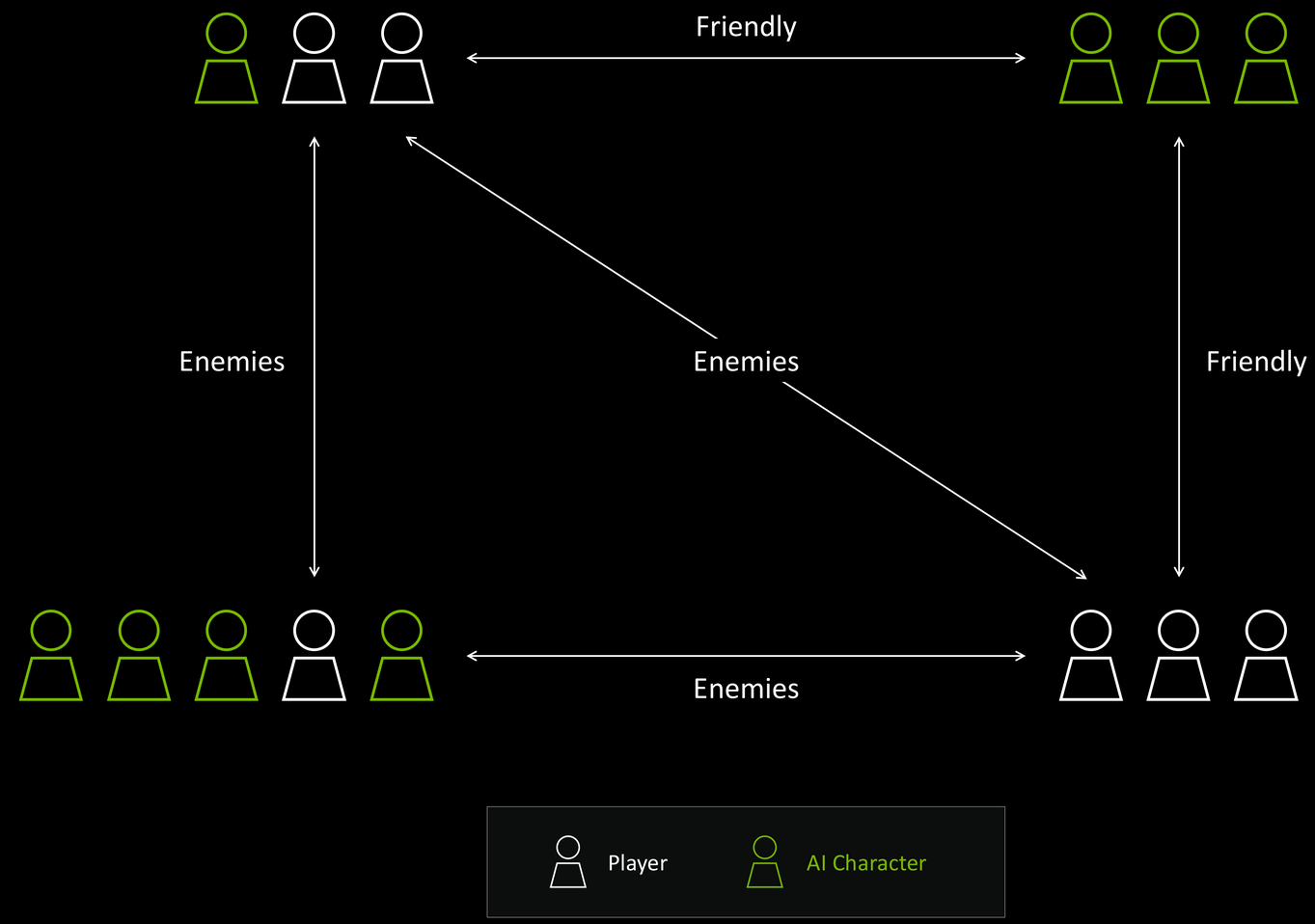
Game Worlds Will be a Matrix of Autonomous AI

Autonomous Companions

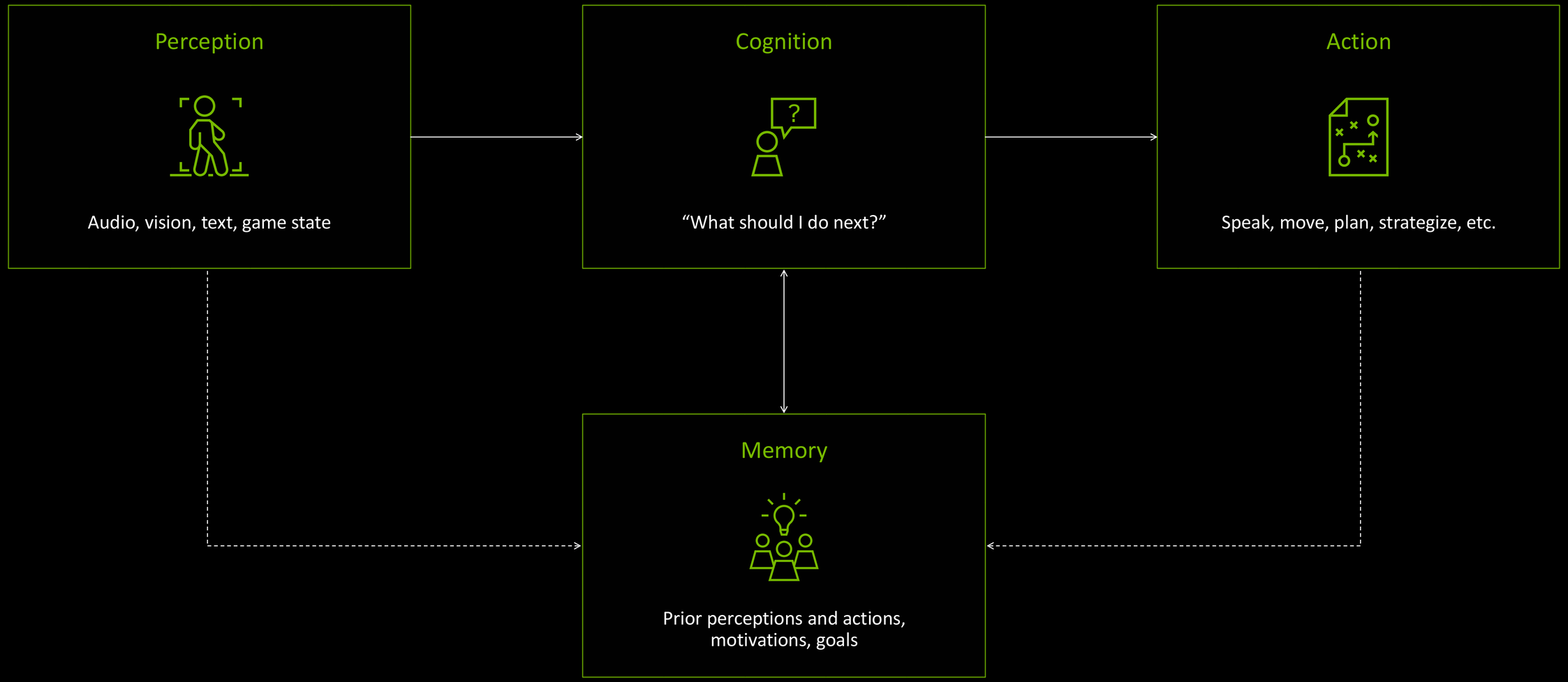
Autonomous Systems

Autonomous Enemies

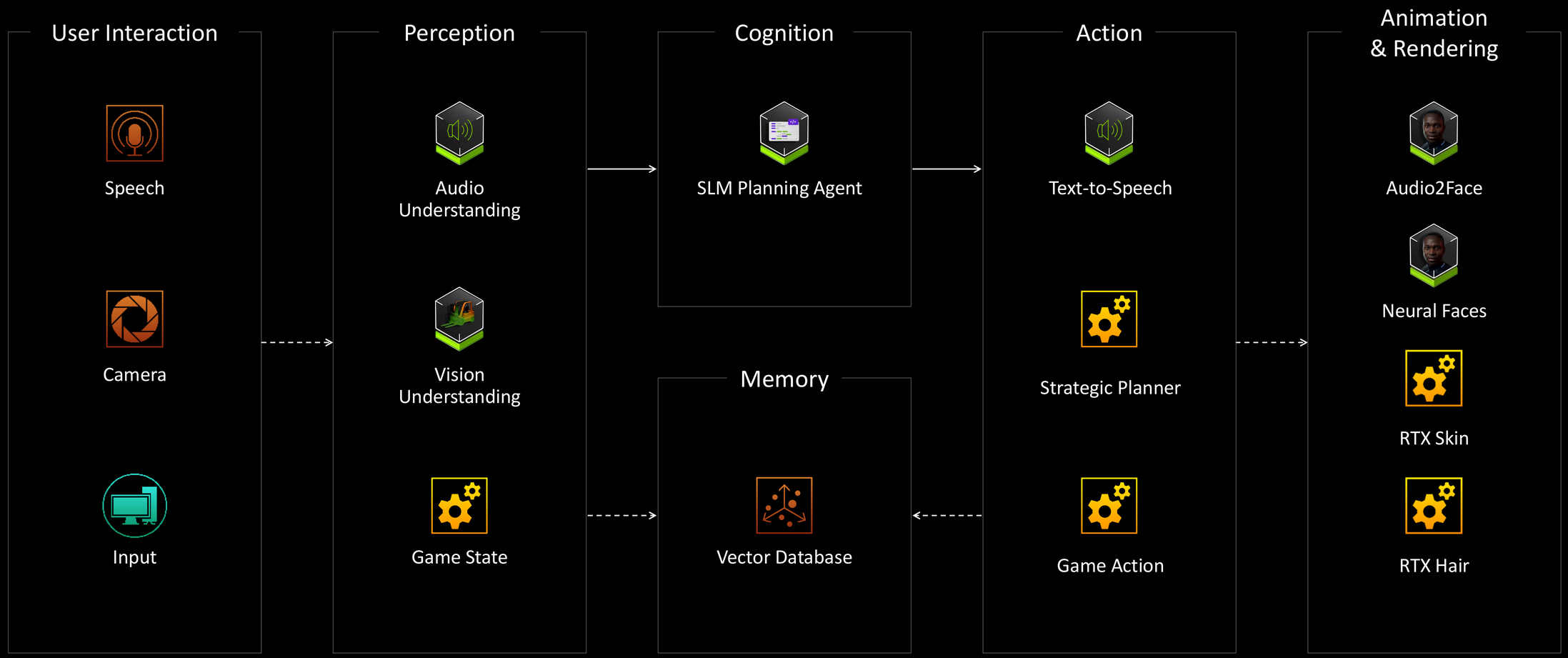
Autonomous AI Worlds Enable Player-like Social Dynamics



Replicating Human Decision Making is Hard

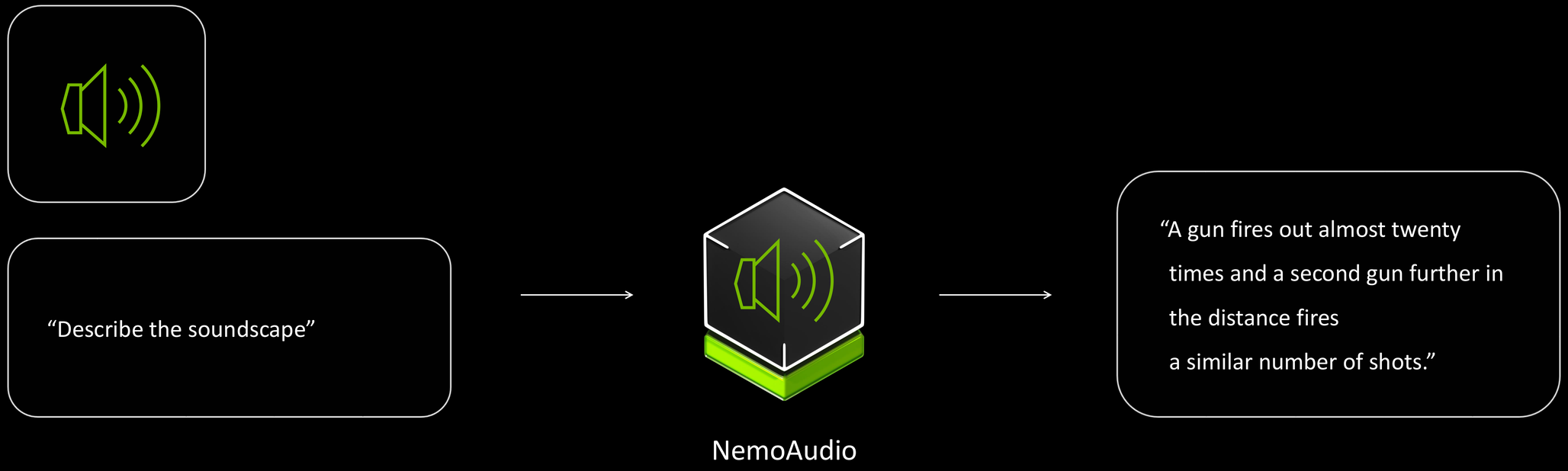


NVIDIA ACE Enables Autonomous Game Characters



Perception: Audio Understanding

Nemoaudio-4B-Instruct



Perception: Vision Understanding

Cosmos Nemotron-4B-Instruct-v2

"Describe the image, player status, and any relevant information on the mini-map"

Cosmos Nemotron-4B

"The player is in combat.
The time is 12:38 AM.
There is an enemy directly ahead of the player."

Cognition: Planning

Mistral NeMo Minitron instruct family of models

GAME STATE

Located outdoor. The direction I am facing is 0 degree, which is approximately North.
I am hungry. This is inflicting damage to my HP.

MOTIVATION

“I want to survive and support my teammates as they loot high value items”

PROMPT

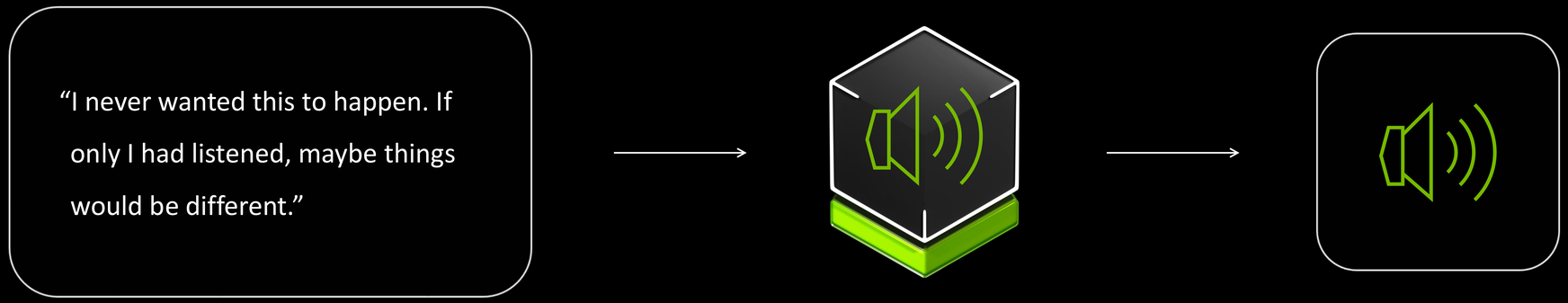
“Given the game state and motivations, what should my next action? Describe in plain English.”

Minitron SLM

“Eat some food while watching over my teammate.”

Action: Voice Generation

Riva A^2 Flow TTS



Action: Action Selection

Mistral NeMo Minitron instruct family of models

PLANNING

"I want to survive and support my teammates as they loot high value items"

AVAILABLE ACTIONS

- Follow Teammate
- Engage Enemy
- Pick up loot
- Hold position
- Eat food
- Answer Teammate

PROMPT

"Given the plan and the available actions,
select the best action."

Minitron SLM

- Follow Teammate
- Eat Food

Animation: Audio-driven AI Face

Next Gen Audio2Face

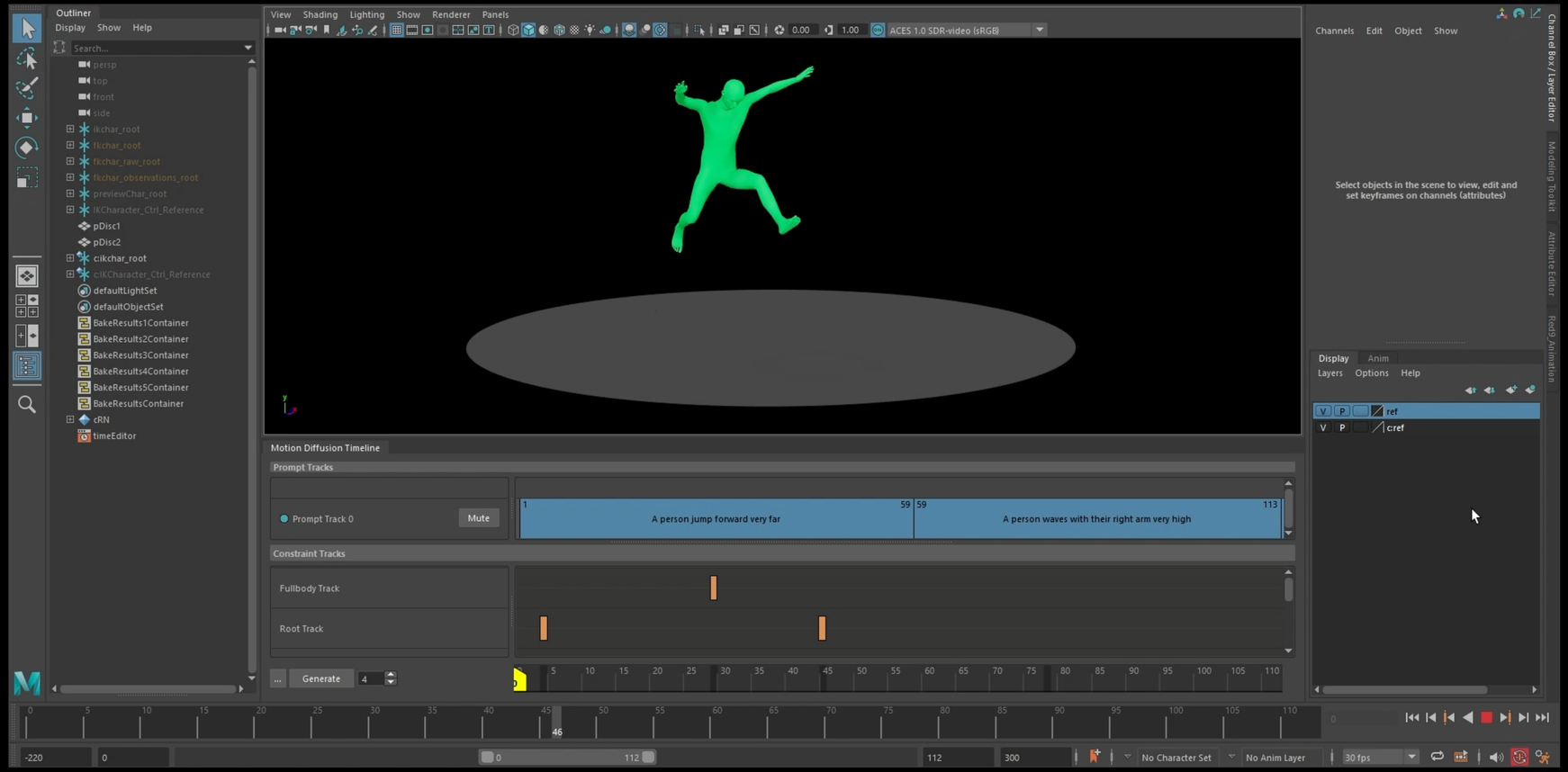
ZooPunk Live Demo

Animation: Text to Body Motion

Introducing ACE AI Body Motion

Animation: Text to Body Motion

Accelerate 3D animation authoring with ACE AI body motion



Animation: Text to Body Motion

Style Transfer, In-Betweening, and Variation

Rendering: Crossing the Chasm of Uncanny Valley

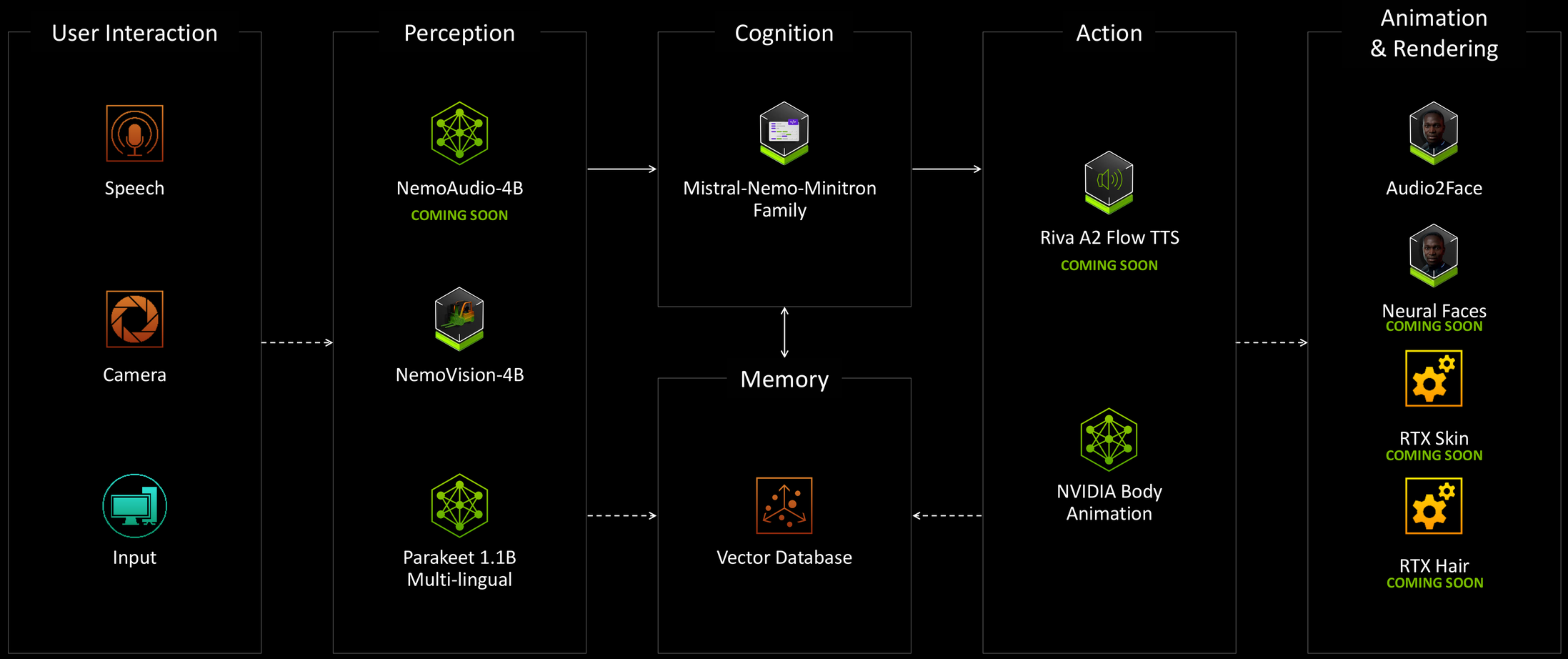
RTX Kit for digital human

RTX Neural Faces

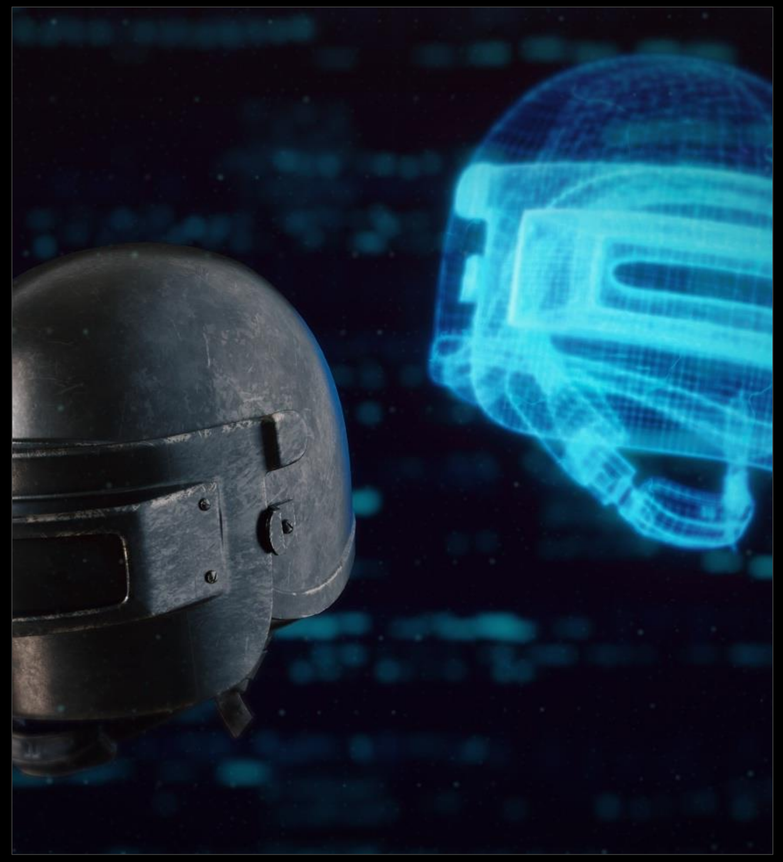
RTX Skin

RTX Hair

New ACE Autonomous NPC Models Available for Developers

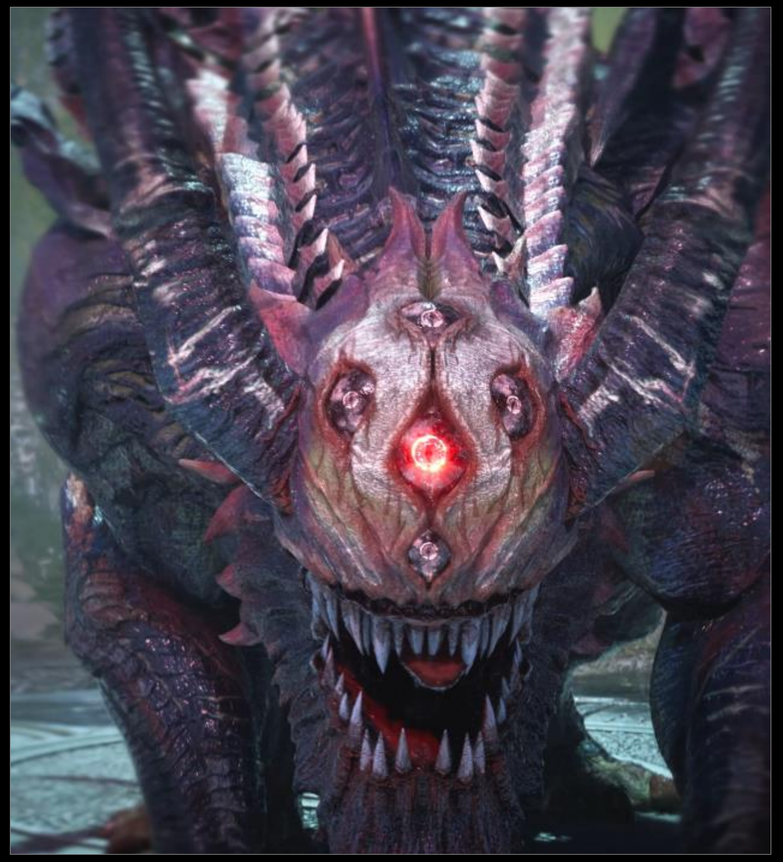


Game Developers Begin Journey to Living Worlds



PUBG Battlegrounds | Krafton
Autonomous Companions

inZOI | Krafton
Autonomous Systems



Mir5 | WeMade
Autonomous Enemies


NVIDIA


KRAFTON

Kangwook Lee

Head of Deep Learning at KRAFTON

PUBG Ally: Solo, but like a team

PUBG Ally Video

PUBG Ally

CPC (Co-playable Character) for PUBG

Talks To You

- Strategic discussions
- Gaming advice
- Chitchat

Teams Up With You

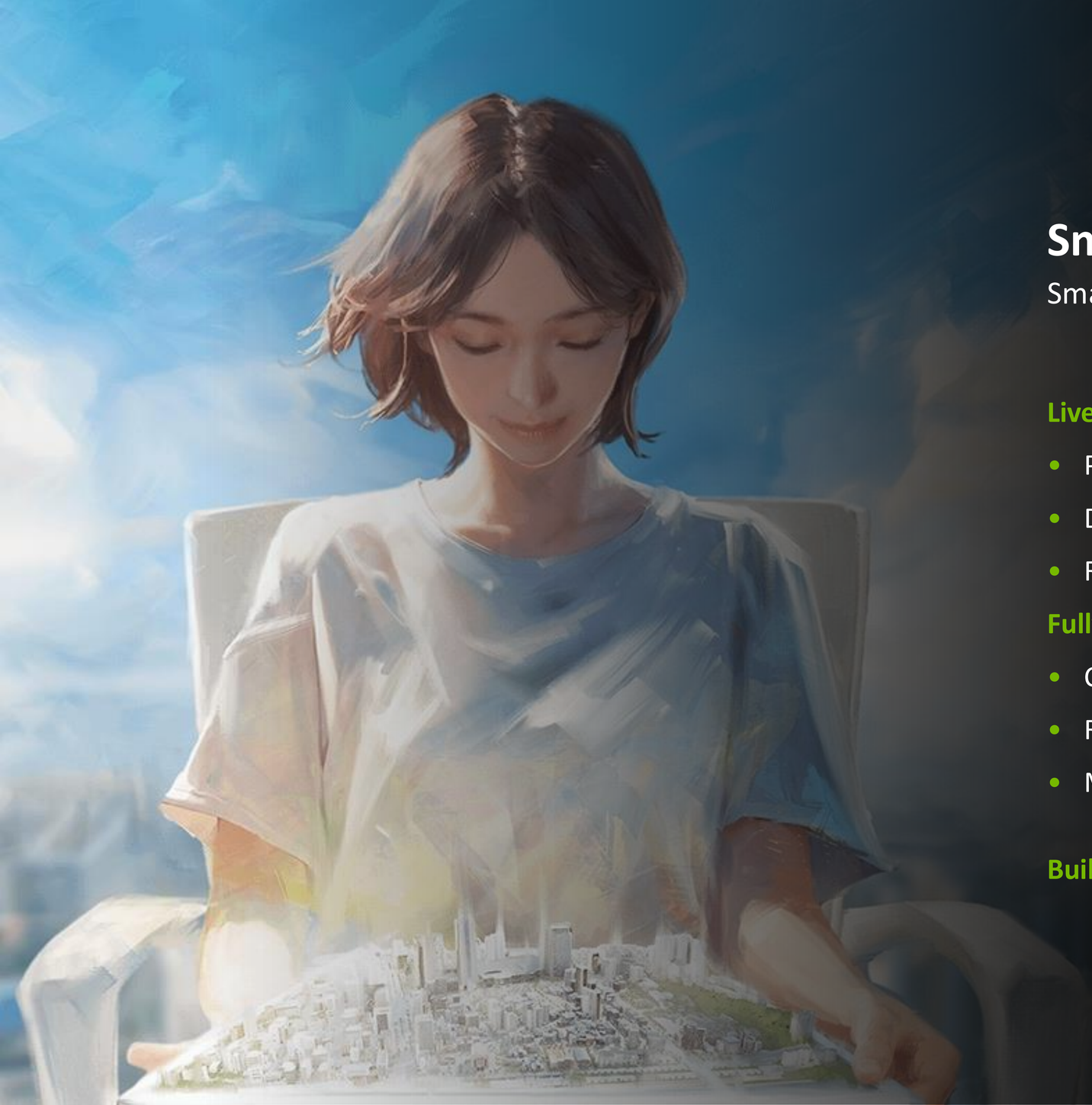
- Long-term planning
- Cooperative/supportive

Built with NVIDIA ACE and runs entirely on the client side!


PUBG Ally Demo


INZOI
Advanced life simulation with Smart Zoi


PUBG Ally Video



Smart Zoi

Smart Zoi (CPC for inZOI)

Lives On Like Us

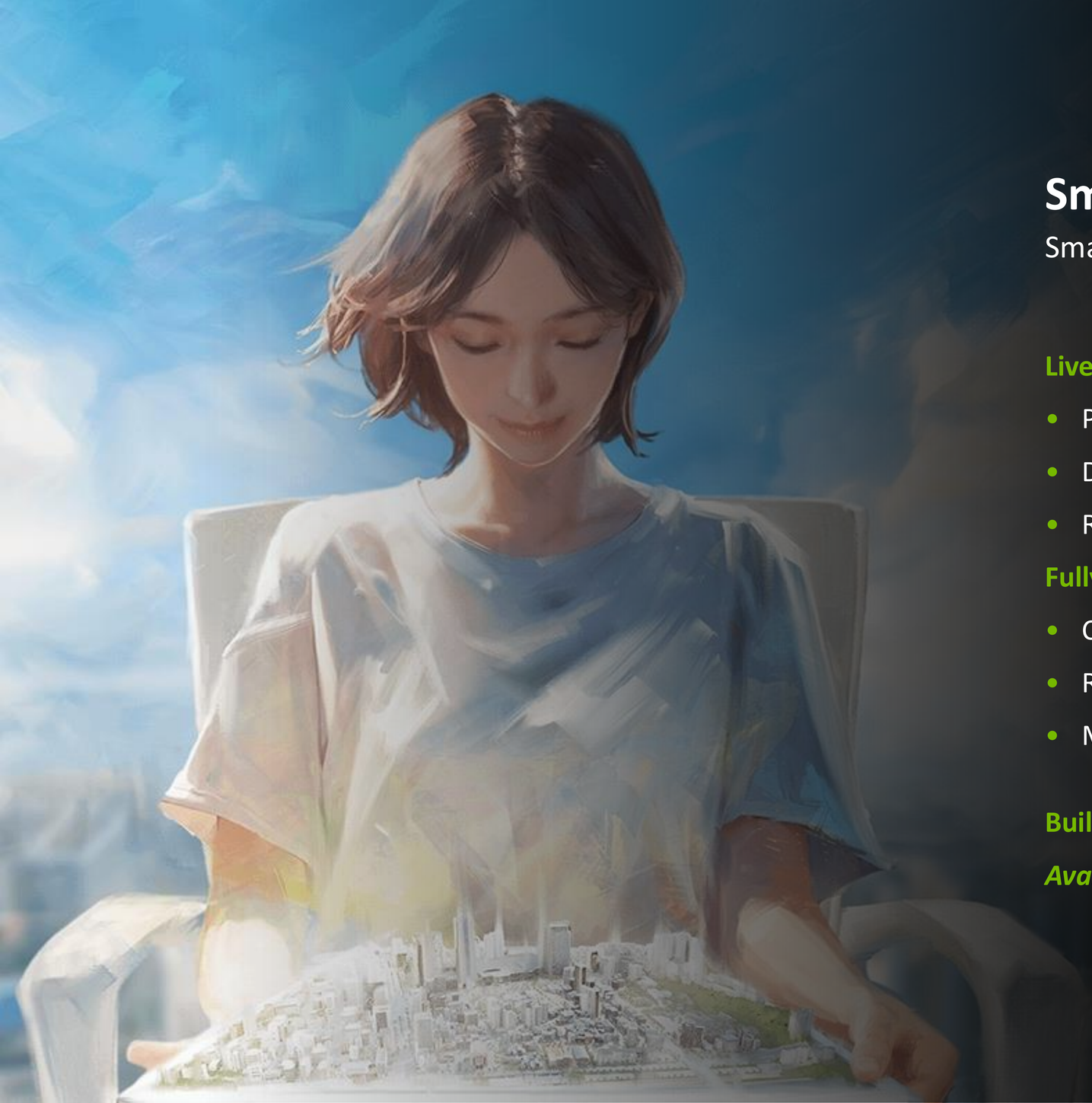
- Planning
- Decision making
- Reflection

Fully Customizable via Natural Language

- Character
- Relationship
- Memory

Built with NVIDIA ACE and runs entirely on the client side!


inZOI Live Demo



Smart Zoi

Smart Zoi (CPC for inZOI)

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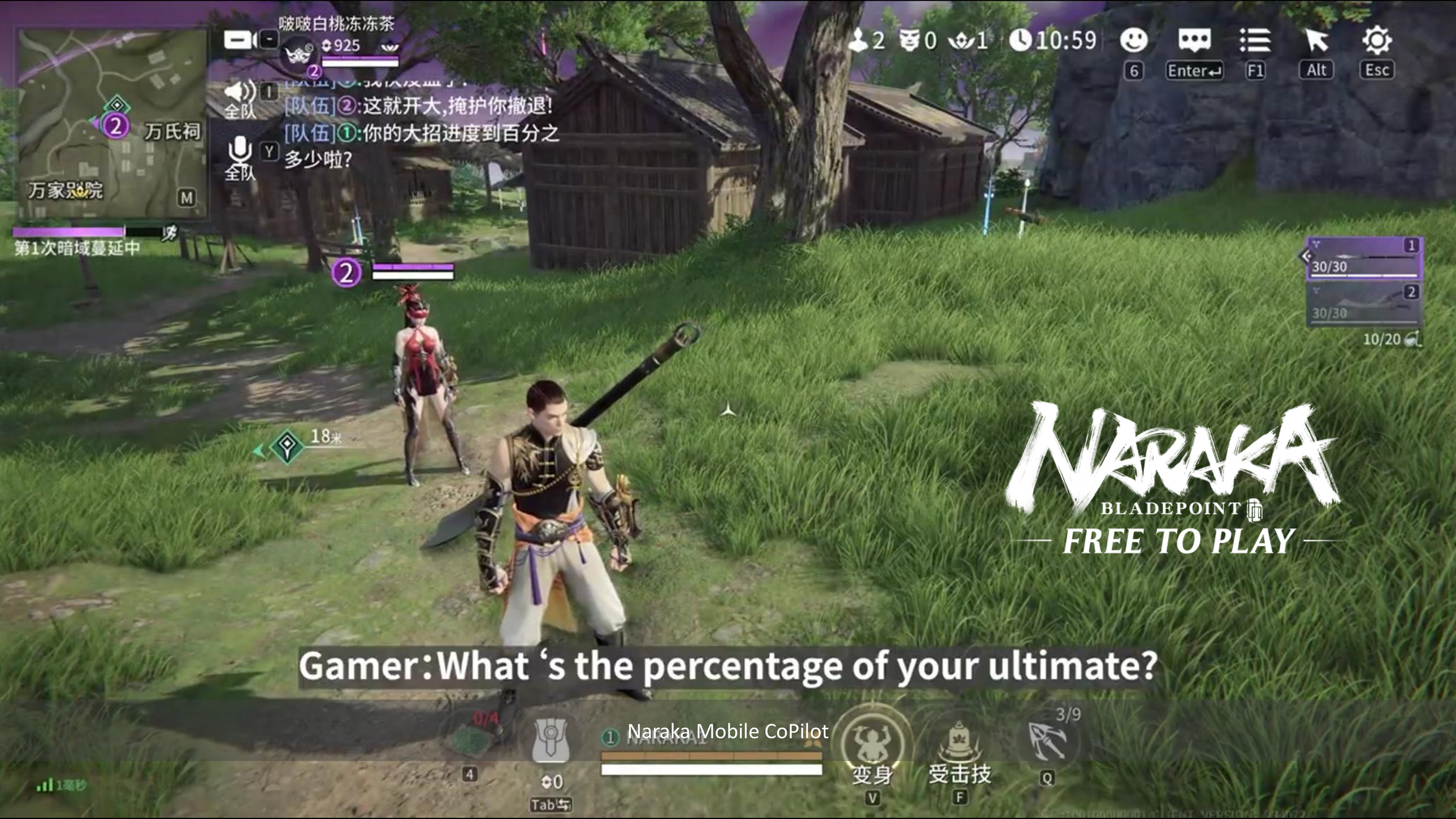
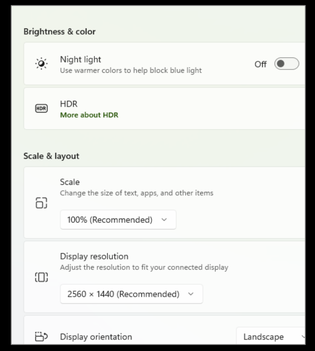
Built with NVIDIA ACE and runs entirely on the client side!

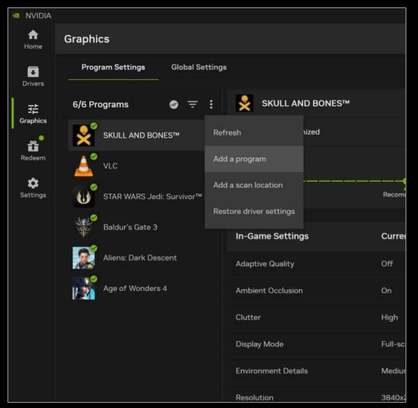
Available on March 28th

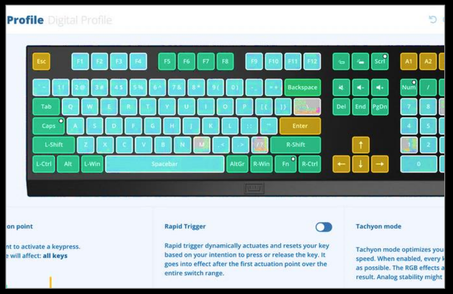
Mir5 Demo—Video


啵啵白桃冻冻茶
925
2 0 1 10:59
6 Enter F1 Alt Esc
全队 I
[队伍]②:这就开大,掩护你撤退!
全队 Y
[队伍]①:你的大招进度到百分之多少啦?
万氏祠
万家祖院
M
第1次暗域蔓延中
30/30
30/30
10/20
18米
NARAKA
BLADEPOINT
FREE TO PLAY
Gamer:What 's the percentage of your ultimate?
Naraka Mobile CoPilot
0/4
4
0
Tab
变身
V
受击技
F
3/9
Q

Optimal System Performance: a Needle in a Complicated Haystack

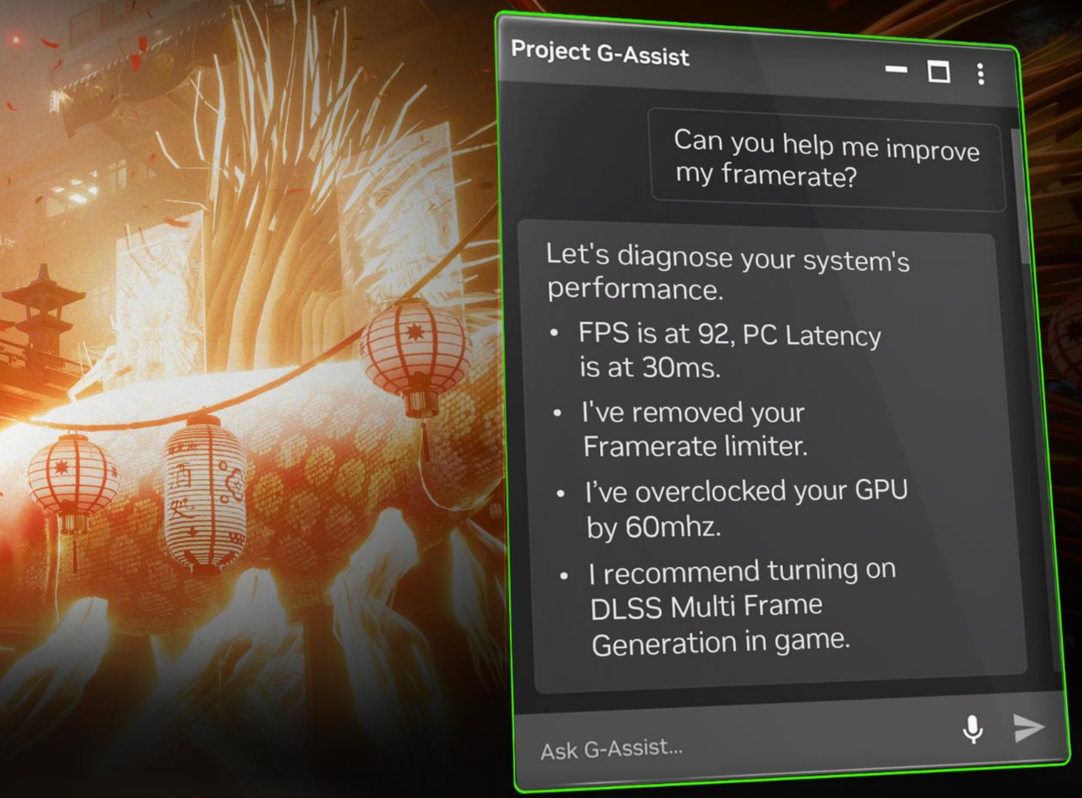






+1.3 Trillion configurations across game, software, and hardware settings

Project G-Assist: AI Assistant for Your RTX PC



Control your system with voice or text commands

Optimize FPS, latency, power efficiency and more

Diagnose and monitor performance with AI insights

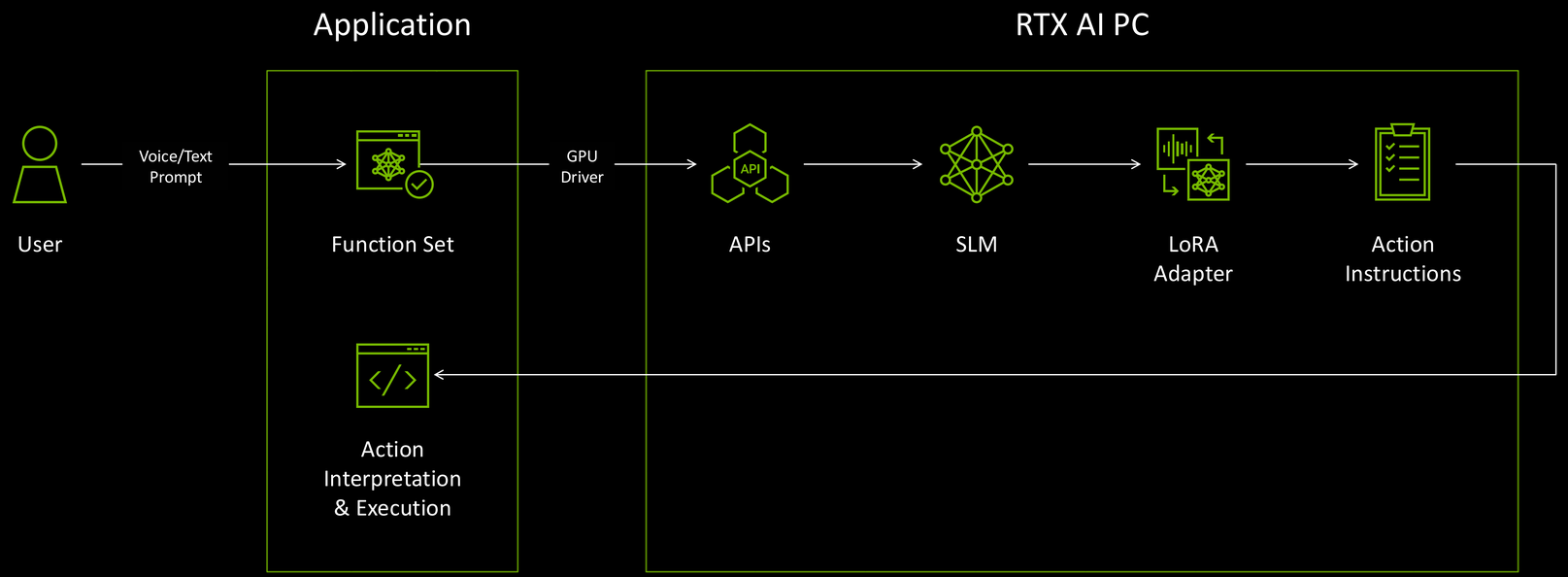
Customize peripheral lighting and manage fan noise

100% on-device AI:
Available to RTX users via NVIDIA app in February

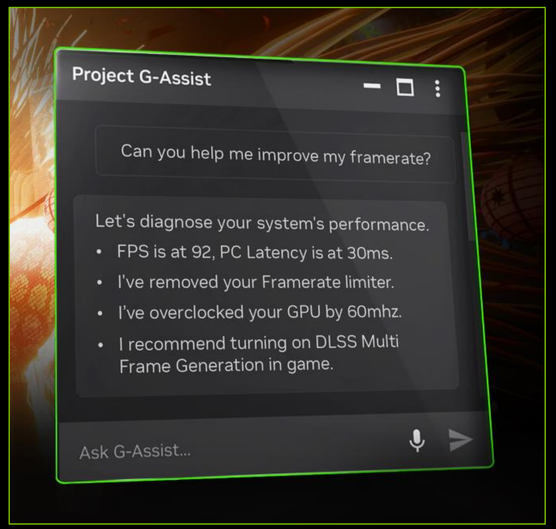
NVIDIA

G-Assist Video

Samples and APIS Available for Partners



Function-Calling Assistants



Powering Custom Assistants For MSI, HP and More

MSI Center

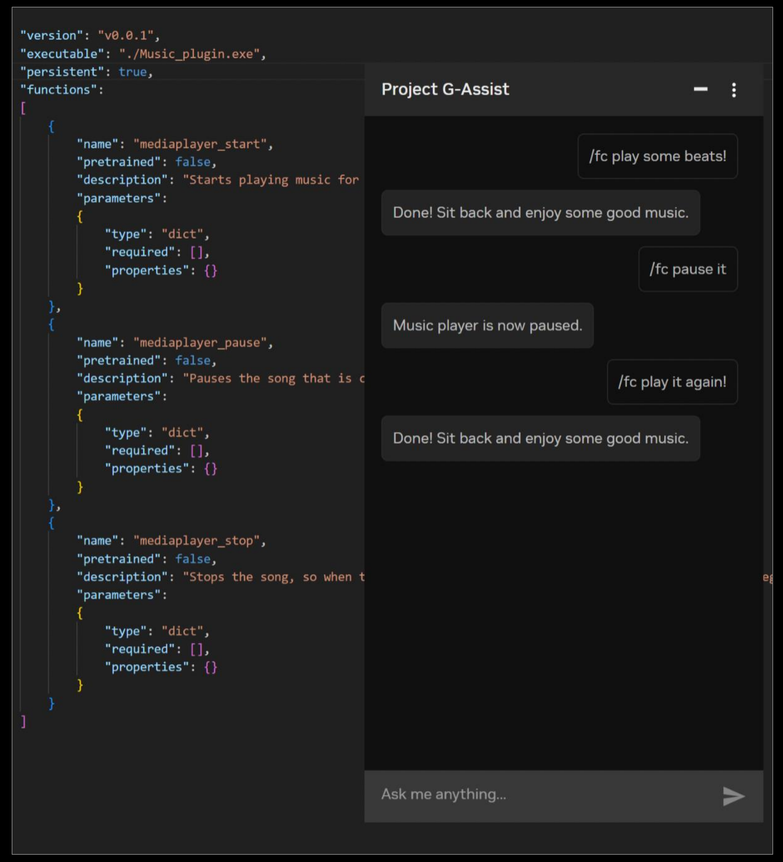
MSI Afterburner

Omen Gaming Hub

Streamlabs

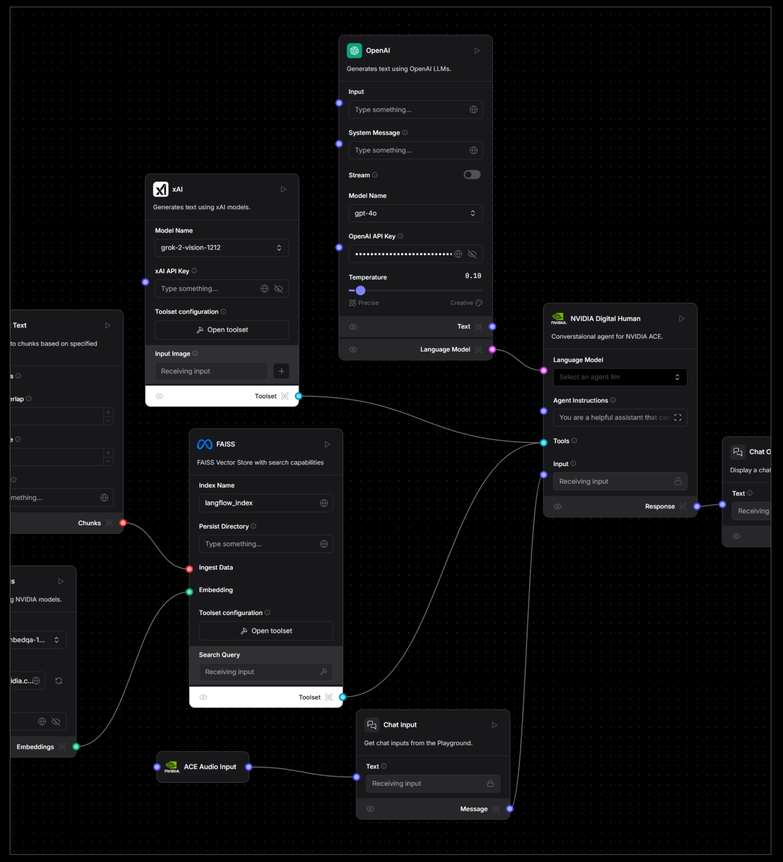
Extensible by the Community

Build your own plugins



Build & test your own plugins

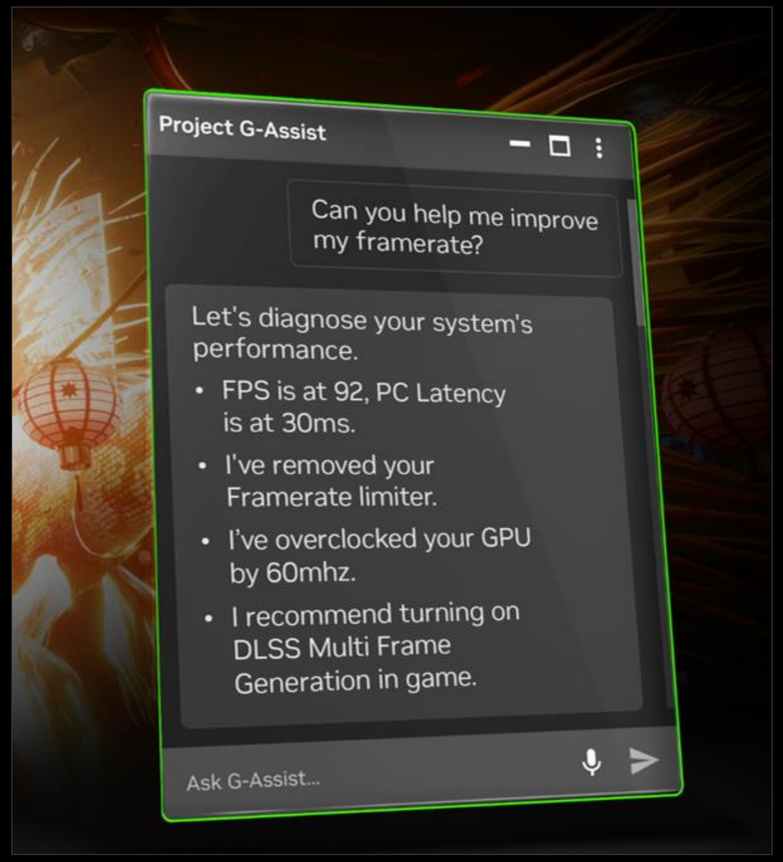
Share & collaborate on GitHub



Connect with popular AI tools

Generative AI Levels Up Gaming

Autonomous Game Characters



AI Coaches and Assistants

Jam & Tea STUDIOS
KRAFTON
logitech
MEANING MACHINE
msi
NetEase Games
OMEN
streamlabs
钛核网络 GAMES
WEMADE

Partners Leading the Way


NVIDIA