# \*\*Building AI for Urban Policy Negotiation: Funding Trade-Offs Between Law Enforcement and Homeless Services in Los Angeles\*\*

## \*\*Introduction\*\*

Homelessness is a pressing issue in many cities, and Los Angeles is no exception. With a limited budget, policymakers must make tough decisions about allocating funds between \*\*law enforcement and homelessness services\*\*. Today, we began developing an \*\*AI-powered negotiation model\*\* to simulate these funding trade-offs and explore data-driven decision-making.

In this article, we outline the first step in this journey: \*\*data collection and integration\*\*—laying the foundation for our AI system to make meaningful policy recommendations.

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## \*\*Step 1: Data Collection & Integration\*\*

Before building the AI model, we needed \*\*real-world budget data and homelessness statistics\*\* to guide the system's decision-making process. Here’s how we approached it:

### \*\*1. Collecting the Budget Data\*\*

We identified \*\*funding sources and allocations\*\* related to law enforcement and homelessness services from multiple sources:

✅ \*\*Los Angeles City Budget 2024\*\*

- \*\*Law Enforcement:\*\* LAPD’s total budget (~$1.98B) and Investigation & Enforcement ($6.8M).

- \*\*Homelessness Services:\*\* Various shelter and housing programs, including:

- Accessible Housing Program ($9.3M)

- Accessible Housing Fund ($38.5M)

- Affordable Housing Trust Fund ($12.8M)

- Housing Opportunities for Persons With AIDS ($386K)

- Inside Safe Program ($185M)

- LAHSA Homeless Services (~$950M)

✅ \*\*HUD Exchange Grants\*\*

- Federal grants awarded to LA for homelessness services.

- Includes programs such as \*\*Continuum of Care (CoC), Emergency Solutions Grants (ESG), and Housing Assistance.\*\*

✅ \*\*LAHSA (Los Angeles Homeless Services Authority) Budget\*\*

- Funding breakdown for \*\*shelters, housing programs, and outreach services.\*\*

- Extracted from \*\*FY 2023 HUD Budget Chart\*\*.

✅ \*\*Homelessness Statistics by Region\*\*

- The \*\*number of sheltered and unsheltered individuals per region\*\* in Los Angeles.

- Allows AI to allocate resources dynamically based on \*\*geographical needs\*\*.

### \*\*2. Merging and Cleaning the Data\*\*

To ensure compatibility, we structured the data into a \*\*consolidated dataset\*\*:

- \*\*Category:\*\* Law Enforcement / Shelter & Housing / Federal Grants

- \*\*Program Name & Funding Source\*\*

- \*\*Budget Allocation ($USD)\*\*

- \*\*Geographical Data (Homeless Population by Region)\*\*

This structured dataset will be \*\*the foundation for AI-driven policy negotiations.\*\*

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## \*\*Step 2: Defining the AI Negotiation Model\*\*

Now that we have a clean dataset, we’re ready to build an \*\*AI-powered negotiation model\*\* that will simulate funding discussions between different stakeholders. Here’s what’s next:

✅ \*\*Define AI Agents & Their Objectives\*\*

- \*\*City Government AI:\*\* Balance budgets and ensure political feasibility.

- \*\*Law Enforcement AI:\*\* Secure funding for policing while addressing homelessness.

- \*\*Shelter Services AI:\*\* Advocate for increased funding for shelters and outreach.

- \*\*Resident AI:\*\* Represent public concerns (crime rates, housing availability, tax burden).

✅ \*\*Integrate AI Decision-Making\*\*

- \*\*LLM-powered argumentation\*\* using \*\*Meta's Llama model\*\*.

- \*\*Multi-Agent RL simulation\*\* using \*\*PettingZoo & Ray RLib\*\*.

- \*\*Budget trade-off modeling\*\* with policy constraints.

✅ \*\*Incorporate Geographical Needs\*\*

- \*\*Regions with high homelessness density get priority\*\* in funding allocation.

- \*\*No region will be left without policing or shelter services\*\*, but \*\*focus areas can shift dynamically\*\*.

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## \*\*What’s Next?\*\*

Today, we successfully:

✔ Integrated \*\*budget and homelessness data\*\* into a structured dataset.

✔ Defined \*\*AI agent negotiation rules\*\* for funding allocations.

✔ Established \*\*regional prioritization\*\* for policing & shelters.

Next, we’ll \*\*begin coding the AI model\*\*, starting with:

🔹 \*\*Building the multi-agent framework using PettingZoo\*\*

🔹 \*\*Fine-tuning Llama for AI-powered policy argumentation\*\*

🔹 \*\*Implementing initial budget trade-off simulations\*\*

This is just the first step in our AI-powered policy modeling journey. Stay tuned as we bring this system to life! 🚀