# Tactical Autonomous Language-Operated Network

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# 1 | Overview

- As much in JAX as possible.

# 2 | SMAX

- Trying to get SMAX [2] to work.
- SMAX is something something something something
- Focus on unitcontrol (no buildings, resources, etc).

# 3 | Behavior trees

- Currently trying to get BT to work.
- LLM should make structured output.
- This output must be BT, following a grammar.

- Tools:
  - Overview by Lin [1]
  - Grammar maker [a].
  - Pydantic [b].

[a] https://grammar.intrinsiclabs.ai/

[b] https://github.com/pydantic/pydantic

# 3 | Behavior trees (cont.)

- BT output should follow a grammar.
- Military people like formal systems.
- BT should be formalized and validated.
- BT should be used for unit control and command issuing.
- Current aproach is to represent behaviors trees as

# 4 | Atomic functions

- Manually written.
- Should written with genetic programming?

# 5 | Mistral

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- LLM should output (or select) BT.
- BT should be used for unit control.
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# References


[1] Timothy Lin. *Generating Structured Output from LLMs*. https://www.timlrx.com/blog/generating-structured-output-from-llms. Nov. 2023.

[2] Alexander Rutherford et al. *JaxMARL: Multi-Agent RL Environments in JAX*. Dec. 2023. DOI: 10.48550/arXiv.2311.10090. arXiv: 2311.10090 [cs].