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AskBeevs Spatial Data Analysis with AI.

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Spatial artificial intelligence integration for GIS tools and infrastructure modeling via AI agents

AI-Driven Spatial Analysis Framework

- Timothy Beevor demonstrated leveraging AI models like Claude and Cursor to interpret and visualize open-source spatial data from government portals.
- The framework functions as a digital twin, retaining data and logic to support complex geospatial queries, such as road network topology and drive-time calculations.
- Independent teams can achieve high utility by avoiding enterprise overhead, enabling the rapid development of mapping tools at a fraction of traditional GIS software costs.

EV Infrastructure and Network Evaluation

- Timothy Beevor presented a map of Victoria's electric vehicle charging network, integrating government data, road networks, and Tesla superchargers.
- Spatial analysis identified potential locations for Tesla diners based on traffic and routing logic, proposing sites including Ballarat, Geelong, Seymour, and Warragul.
- The analysis indicates a performance disparity, with Tesla superchargers providing faster, more reliable speeds compared to existing 50kW government infrastructure.
- Timothy Beevor utilized demographic census data and traffic volume metrics to reverse-engineer site selection logic for network expansion strategies.

Advanced Use Cases and System Development

- Timothy Beevor noted that spatial tools can model complex infrastructure, including water networks, pipe thickness, and digital elevation models for hydrological calculations.
- Future modeling scenarios include identifying optimal locations for data centers by integrating transmission data, land planning constraints, and cooling requirements.
- The group discussed the Amachi operating system, noting its design allows agents direct access to operating system components for improved browser and system automation.

Spatial Analysis and Data Center Planning

- Timothy reviewed a model mapping transmission substations, industrial zones, and bushfire management overlays.

- Timothy highlighted that high-suitability scores currently favor cities due to existing infrastructure, which may not be the optimal location.
- Timothy proposed conducting a fine-grained spatial analysis of the Latrobe Valley to identify suitable data center locations.
- Bruce discussed utilizing AI to perform an audit of land overlays, including mining, heritage, and local land services, for his property.

Global Energy Security and Economic Outlook

- Timothy reported a significant decline in fuel reserves, noting a drop from 3,500 million liters to 3,000 million liters over a 7-day period.
- Timothy suggested that the exhaustion of strategic oil reserves in the US and Asia could lead to a significant credit event.
- Bruce and Timothy attributed systemic energy fragility to the post-COVID closure of 5 refineries and insufficient domestic fuel storage.

EV Charging Economics

- Timothy estimated the cost of EV charging for a round trip from Melbourne to Noosa, including local driving, at approximately \$270.
- Timothy noted that private supercharger installations are currently available for approximately \$250,000 for a 4-charger unit.

Next steps

- ☐ [Timothy Beevor] Generate Technical Report: Generate a technical report in HTML format detailing the logic and methodology used for selecting the new Tesla charger sites. Include an analysis of whether alternative sites would be superior with justifications.
- ☐ [Timothy Beevor] Classify Chargers: Classify charger points by power using the government charges text field and Tesla power field into a numeric maximum kilowatt attribute. Symbolize the points on the map by their power class destination.
- ☐ [Timothy Beevor] Send Report Folder: Send the report folder containing the spatial data analysis results.
- ☐ [sanjeev gupta] Build Network Model: Develop a model for electric network and data center locations.
- ☐ [Bruce] Perform Spatial Audit: Conduct an audit of all spatial data for the farm using AI prompts.
- ☐ [The group] Schedule Amachi Session: Schedule a training session regarding the Amachi operating system.

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