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### MOTIVATION AND OBJECTIVES

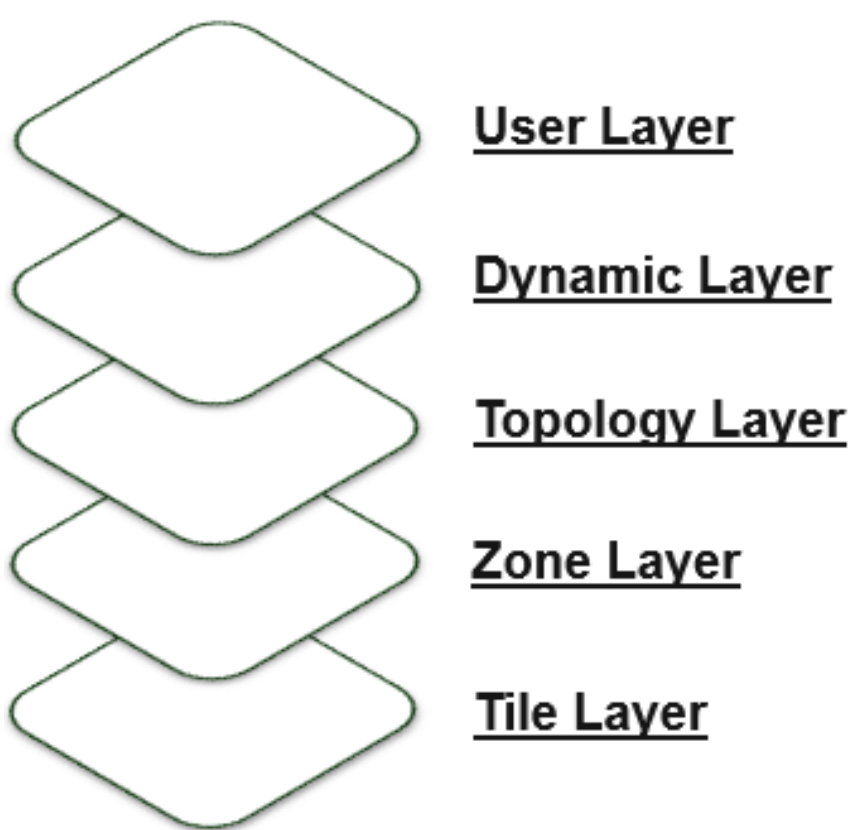
- ❖ Elevating the application to meet the evolving needs of modern power system analysis.
- ❖ Provide a powerful foundation and framework to improve functionality, usability, and allow for server hosting.

### ONGOING TASKS AND FUTURE WORKS

- ❖ Development for an AMS viewer to display flexible dispatch modeling and dispatch-dynamic co-simulation simulation
- ❖ Improving the visualizer as a standalone tool.
- ❖ Improving the usability of the platform by developing user-friendly API and documentation.

### AGVis OVERVIEW AND AMS VISUALIZATION

#### AGVis Architecture



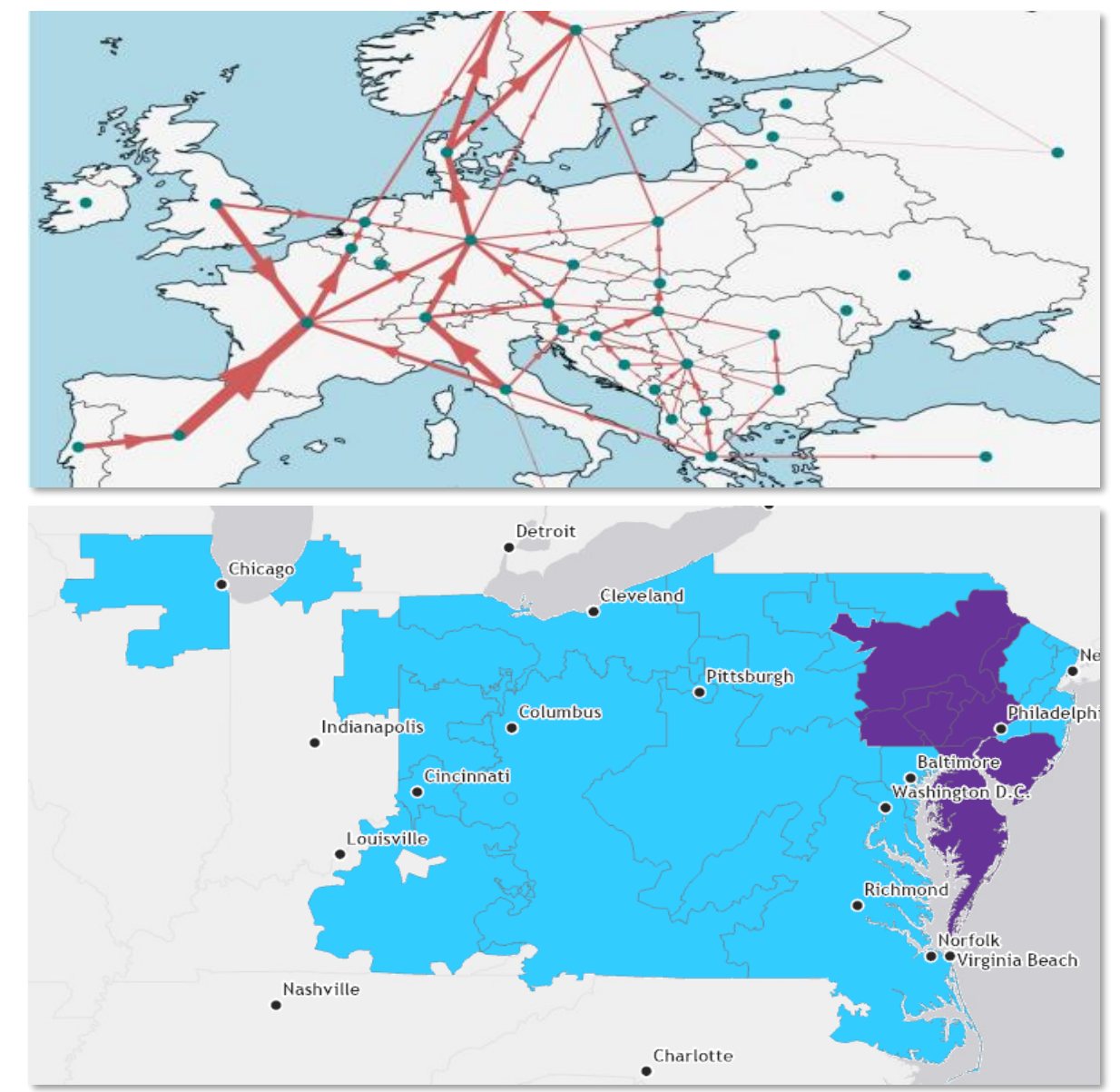
#### Next Layer: Dispatch

##### Power Flow

- Use vectors to show the power flow between buses with boldness and color of arrows to represent the numerical value of the power flow.
- Picture source: Schäfer, Mirko, et al. "Principal Cross-Border Flow Patterns in the European Electricity Markets." 2019 16th International Conference on the European Energy Market (EEM). IEEE, 2019.

##### Price map

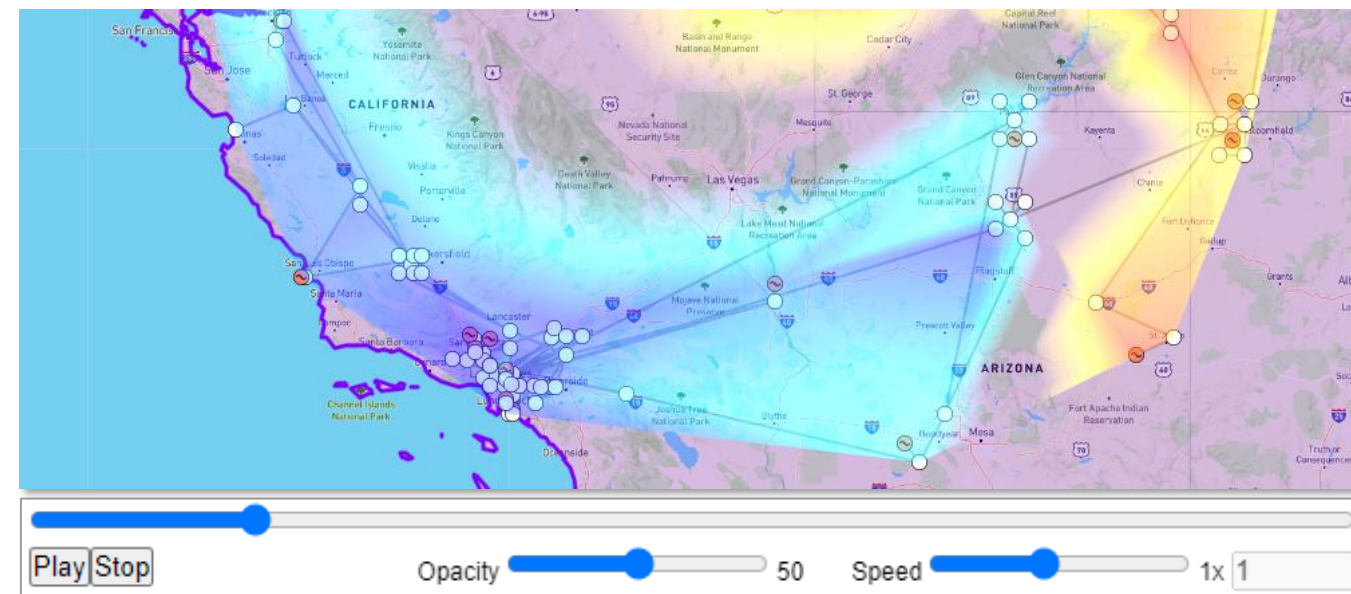
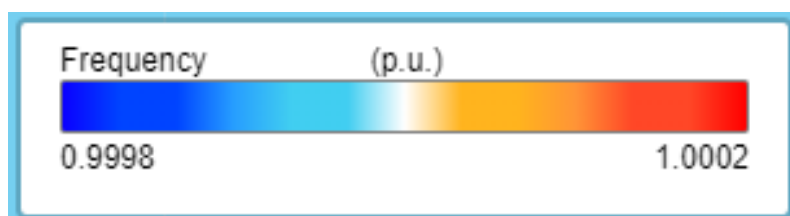
- Assign colors or contour lines to different geographical regions, each representing the cost of electricity at a specific time.
- Picture source: "Locational marginal pricing map," PJM©, <https://www.pjm.com/library/maps/lmp-map.aspx> (accessed Mar. 13, 2024).



### GENERAL IMPROVEMENTS

#### UI Elements

- Dynamic Legend
- Opacity Slider

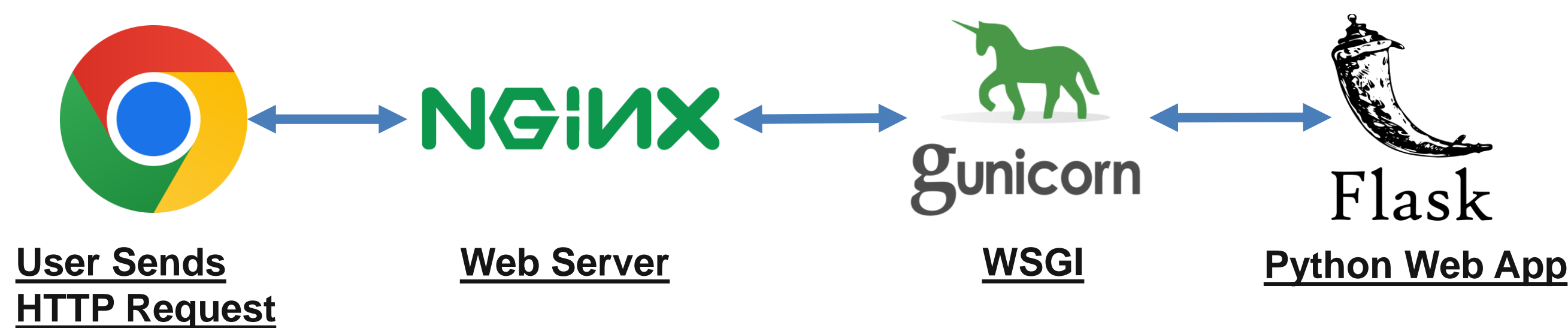


#### Software Quality

- Implemented software testing with pytest to ensure AGVis functionality and enforce quality code.
- Refactored code for cleanliness
- Developer comments overhaul
- Bug fixes and various QoL changes.

### BACKEND ARCHITECTURE | DEMO ENVIRONMENT

#### Production Level Backend



#### Advantages

- Efficient Request Handling
- Scalability
- Secure Hosting
- Flexibility with Integrations
- Client-Side Optimization

#### Demo Environment

Utilizes Save and Load Simulation Features to Provide Users Example Scenarios

1. Provides 5 example simulations – WECC, NPCC, IEEE39, ERCOT276, and EI528
2. Requests the chosen sample simulation file from the backend through a HTTP request.
3. Loads simulation file using AGVis' built in load simulation functionality and displays indicators.
4. Displays simulation.

