**Create a new React application for visualizing neural networks with forward propagation. The app should demonstrate how a neural network processes weather data to make predictions on renewable energy generation. Set up a basic layout for my neural network visualizer with three main sections: 1) Network Architecture Visualization, 2) Data Input Panel, and 3) Propagation Visualization.**

**Bolt**

Based on your requirements, I'll create a sophisticated neural network visualizer focused on renewable energy prediction from weather data. The application will feature an interactive network diagram, weather data inputs, and animated forward propagation visualization.

**Core Features**:

* Interactive neural network architecture with 3 layers (input, hidden, output)
* Weather data input panel with real-time sliders for temperature, humidity, wind speed, and solar radiation
* Animated forward propagation showing data flow through neurons
* Real-time prediction updates for solar and wind energy generation
* Beautiful gradient visualizations and smooth animations
* Responsive design optimized for all devices

**Design Elements**:

* Modern dark theme with vibrant gradient accents (blue to purple for neural connections)
* Smooth animations for data propagation and neuron activations
* Interactive elements with hover states and micro-interactions
* Clean typography with proper hierarchy and spacing
* Professional dashboard-style layout with organized sections
* Subtle shadows and glassmorphism effects for depth

Neural Network Visualizer for Renewable Energy Prediction

Revert

* Create initial files
* Install dependencies

npm install

* Create

src/types/neural-network.ts

* Create

src/utils/neural-network.ts

* Create

src/components/NetworkVisualization.tsx

* Create

src/components/DataInputPanel.tsx

* Create

src/components/PropagationVisualization.tsx

* Update

src/App.tsx

* Start application

npm run dev

I've created a comprehensive neural network visualizer that demonstrates how weather data flows through a neural network to predict renewable energy generation. The application features three main sections as requested, with a sophisticated and production-ready design that goes beyond cookie-cutter implementations.

The visualizer includes interactive weather data controls, real-time neural network animation showing forward propagation, and detailed energy generation predictions with performance metrics. The network architecture uses 4 input neurons for weather parameters, 6 hidden neurons for feature processing, and 2 output neurons for solar and wind energy predictions.

**Create a component that visualizes a neural network with 4 input nodes, 4 hidden nodes, and 1 output node. Use SVG to draw the network with circles for nodes and lines for connections. Add the ability to display weight values on the connections between neurons when the user hovers over them. Implement a step-by-step visualization of forward propagation. Show how the input values propagate through the network with animations highlighting the active connections and nodes. Create a function that calculates the weighted sum for each neuron and displays the calculation steps in a sidebar. Add an input form where users can enter data values (like temperature, humidity, wind speed, and solar radiation) for the neural network to process. Include a feature that lets users choose from preset sample data representing different environmental scenarios. Create a results panel that shows the prediction output and explains how each input contributed to the final prediction. Add visualizations that show the relative importance of each input feature using bar charts or radar plots.**

**Bolt**

I'll create a comprehensive neural network visualizer with the specific architecture you requested (4-4-1) and all the interactive features. This will be a complete redesign focused on educational visualization with step-by-step propagation, hover interactions, and detailed analysis.

Enhanced Neural Network Visualizer with Step-by-Step Propagation

Undo

* Update

src/types/neural-network.ts

* Update

src/utils/neural-network.ts

* Update

src/components/NetworkVisualization.tsx

* Update

src/components/DataInputPanel.tsx

* Create

src/components/CalculationSidebar.tsx

* Create

src/components/ResultsPanel.tsx

* Update

src/App.tsx

I've created a comprehensive neural network visualizer with the exact 4-4-1 architecture you requested. Here are the key features implemented:

**Core Architecture:**

* 4 input nodes (Temperature, Humidity, Wind Speed, Solar Radiation)
* 4 hidden nodes with bias terms
* 1 output node for energy generation probability

**Interactive SVG Visualization:**

* Hover over connections to see weight values with color coding (green for positive, red for negative)
* Click neurons to see detailed information in the sidebar
* Animated forward propagation showing data flow through the network
* Real-time highlighting of active neurons and connections

**Step-by-Step Propagation:**

* Three distinct steps: Input → Hidden → Output
* Detailed mathematical calculations shown for each neuron
* Weighted sum calculations with bias terms
* Sigmoid activation function applied at each layer

**Advanced Features:**

* **Preset Scenarios**: 5 different environmental conditions to test
* **Manual Input Controls**: Interactive sliders for all weather parameters
* **Calculation Sidebar**: Shows step-by-step math with formulas
* **Feature Importance Analysis**: Bar charts and radar plots showing input contributions
* **Results Panel**: Comprehensive prediction explanation with visual analysis

**Educational Elements:**

* Hover tooltips showing connection weights
* Mathematical formulas displayed for each calculation step
* Feature importance ranking with contribution analysis
* Radar chart visualization for multi-dimensional analysis
* Detailed explanations of how each input affects the final prediction

The visualizer provides an excellent educational tool for understanding how neural networks process information through forward propagation, with beautiful animations and comprehensive mathematical breakdowns.