Utilization Manual: Interactive Map of Computer Science Fields

Team Digital Pioneers

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Introduction

This manual provides instructions for using the Interactive Map of Computer Science Fields, a web-based visualization tool designed to help users explore the structure, subfields, and key contributors of computer science, including detailed information for each domain such as Robotics.

1 Accessing the Map

1. Open the file `mapIndex.html` in your web browser (Chrome, Firefox, Edge, etc.).
2. The map will load automatically, displaying the main fields of computer science as nodes in a constellation layout.

2 Navigating the Map

- **Primary Nodes:** Each large node represents a major field (e.g., Robotics, Artificial Intelligence).
- **Secondary and Tertiary Nodes:** Subfields and subsubfields are shown as smaller nodes connected to their parent field.
- **Dynamic Layout:** Node positions are randomized and non-overlapping for clarity. The layout may change on reload.

3 Interacting with Nodes

- **Click a Primary Node:** Reveals all subfield and subsubfield labels for that domain and opens the info panel with detailed information.
- **Click a Subfield Node:** Shows all subsubfield labels for that subfield and updates the info panel with subfield-specific data.
- **Click a Subsubfield Node:** Displays only the label for that subsubfield and its parent, and shows detailed info in the panel.

- **Click the Map Background:** Resets all labels and info panel to the default overview.

4 Info Panel

- The right-side info panel displays context-sensitive information for the selected node.
- Sections may include: description, core concepts, key problems, applications, tools, pioneers, timeline, advancements, literature, related fields, and professors (with clickable links).
- For example, clicking on **Robotics** will show a list of UVT professors, such as Theodor Grumeza, and other relevant data.

5 Legend and Color Coding

- Each field is color-coded for easy identification.
- Subfields and subsubfields use lighter or related shades.

6 Data Structure

- Field data is stored in JSON files (e.g., `robotics.json`) in the `Data/` directory.
- Each file contains structured information: name, professors, core concepts, key problems, applications, tools, pioneers, timeline, subfields, subsubfields, advancements, literature, and related fields.

7 Customizing or Extending the Map

1. To add or edit fields, modify the corresponding JSON files in `Final version/Data/`.
2. To update the visualization logic or info panel, edit `sciptD.js`.
3. For style changes, edit `styles.css`.

8 Troubleshooting

- If the map does not load, ensure your browser allows JavaScript and local file access.
- For missing data or display issues, check the JSON files for syntax errors.
- For further help, contact the project maintainers or refer to the README (if available).