## World Academy of Science, Engineering and Technology International Journal of Computer and Information Engineering Vol:18, No:01, 2024

## Design and Development of Data Visualization in 2D and 3D Space Using Front-End Technologies

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**Abstract :** This study delves into the design and development intricacies of crafting detailed 2D bar charts via d3.js, recognizing its limitations in generating 3D visuals within the DOM. The study combines three.js with d3.js, facilitating a smooth evolution from 2D to immersive 3D representations. This fusion epitomizes the synergy between front-end technologies, expanding horizons in data visualization. Beyond technical expertise, it symbolizes a creative convergence, pushing boundaries in visual representation. The abstract illuminates methodologies, unraveling the intricate integration of this fusion and guiding enthusiasts. It narrates a compelling story of transcending 2D constraints, propelling data visualization into captivating three-dimensional realms, and igniting creativity in front-end visualization endeavors.

**Keywords:** design, development, front-end technologies, visualization

Conference Title: ICIVVDS 2024: International Conference on Information Visualization and Visual Data Science

Conference Location: Rome, Italy Conference Dates: January 15-16, 2024