

Masters Project Report

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My project involved the creation of an interactive virtual reality system for visualizing the creation of dinosaur tracks and an evaluation of pathline seeding methods using this system. I developed this system through close collaboration with paleontologists (Dr. Stephen Gatesy and his PhD student Morgan Turner) to allow interactive study of track creation with mud particles, pathlines, surfaces, and visualizing clusters within the data. I also performed an evaluation of several pathline seeding methods, which I believe is applicable more broadly to many fluid flow visualizations. This work resulted in a paper submitted to SciVis2017 that is currently under review, which I have attached. The work in the paper was primarily done by me, with notable exceptions of the dataset creation and the feedback given in the evaluation. It should also be noted that many ideas for this work came from the regular meetings between David Laidlaw, our collaborators, and me. Future work that could be undertaken on this project includes continued work with the collaborators to fit their changing visualization needs, in particular exploring more effective clustering methods.