The Faces of Microbial Communities

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**Abstract**

Currently, microbiologists use charts and distance matrices to analyze populations of microorganisms in a sample. This method is difficult and unintuitive. We improve on this process by leveraging the brain’s ability to recognize subtle patterns and differences in human faces. Our project uses the MakeHuman python API to generate human models based on microbial community data and presents the models to the user. These models’ facial features are weighted based on the sample data, allowing users to more easily find patterns and differences.

Currently, microbiologists use charts and distance matrices to analyze populations of microorganisms in a sample. This method is difficult and unintuitive. We improve on this process by leveraging the brain’s ability to recognize subtle differences in human faces. The project generates human faces based on microbial community data and presents them to the user. The facial features are created based on the sample data, allowing users to easily find patterns and differences.

**Performance Metrics**

Pre-expo

* Can we load a data file?
* Can we generate a model based on that data?
* Can we present the generated models to the user?

Post-expo

* Have we discovered, using this tool, something that would otherwise be missed?
* Has our tool enjoyed widespread adoption by researchers in the field of microbiology?