

STUDY 7/0

Error-Generated Spatiotemporal Animation

Summary

In *Study 7/0* we explore the positioning errors of a static GPS receiver through a series of generative procedures. The project is motivated by the idea of cognitive mapping as a configuration of individual, non-linear and discontinuous spatiotemporal experiences, and their outcomes. We use technical flaws as a conceptual source material for further creative processing and expression. We also investigate the effective approaches to emergence in generative art, where a simple initial setup of a complex system can produce surprising phenomena.

We secured a GPS receiver to a desk, powered it up, and let it run a Track Log function for 7 days, 7 hours, 16 minutes and 11 seconds. While the ideal Track Log plot for an immovable GPS receiver is essentially a single point, our setup had recorded 8438 positions on a 34.7km long path covering an area of 2.1km², with an average speed of 0.2km/h and a maximum speed of 17.9km/h. This is a consequence of the limited precision of a GPS receiver operating inside a building under slightly changing weather, combined with the inaccuracy of GPS infrastructure.

We used the timestamps of the 2D waypoint data (longitude and latitude) to animate a red dot along the horizontal projection of the Track Log path, speeding up the 630,971 seconds of the real-time record to 281 seconds. In the animation on the left, we isolate the current 2.25% section of the whole path (780m), revealing the intricate dynamics of error-generated virtual motion. In the animation on the right, we follow the current 2.25% building up the whole path. To contextualize the visuals, we display all numerical values from the Track Log dataset.

We consistently applied the Track Log dataset as a generator for the sound, following the metaphor of movement in real space to exploit the acoustic phenomena that result from it, such as Doppler effect and air absorption effect.

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