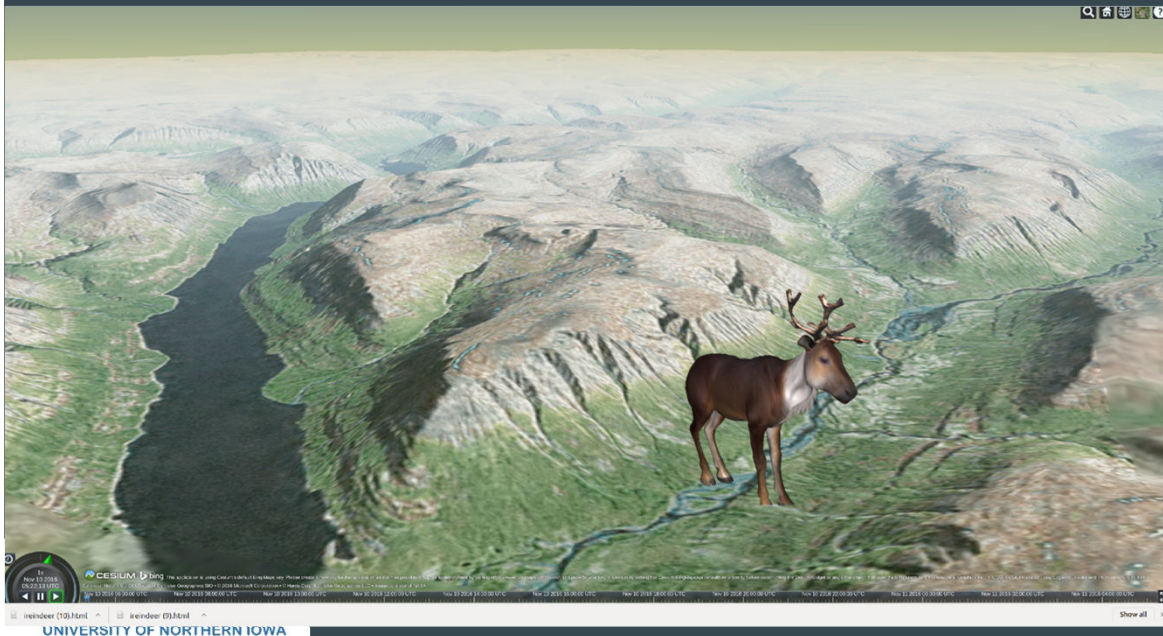


iReindeer:

Creating a virtual reality gaming interface to teach K-12 students the basics of Arctic ecosystem functioning and reindeer/caribou migration: Taimyr Peninsula ecosystems and Wild Reindeer as an example



Anna Pestereva
ARCTICenter
University of Northern Iowa

CARMA 9.
Whitehorse, Canada.
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iReindeer - educational game

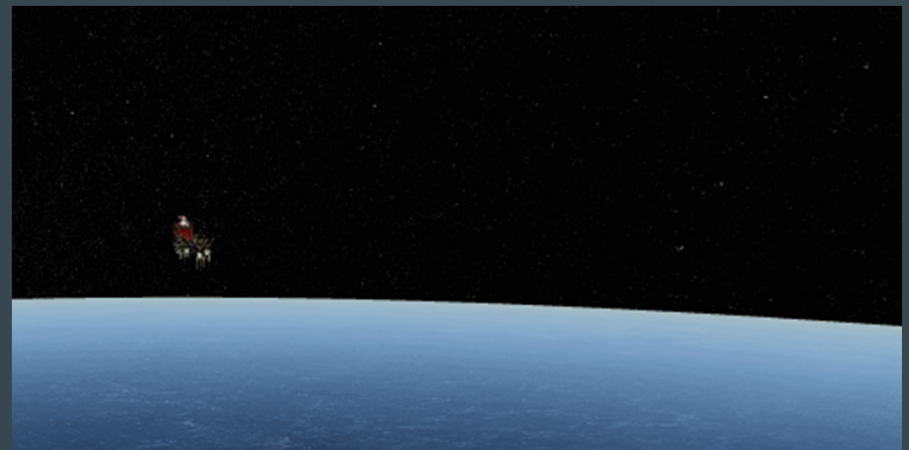
- Outreach effort - spread the knowledge beyond research community
- Youth engagement - educate through fun, non-violent interactive game
- Raise awareness about reindeer, Taimyr region, element connections within ecosystems

High quality widespread location information in recent years lead to growth of location services and improved maps. Pokemon Go showed great success of a location-based game. Ground is laid for more advanced project with elements of spatial analysis.

Inspiration:

Never Alone Game -
based on Inuit tales

NORAD Santa tracker
& other CesiumJS games



iReindeer - design

- 3D quest game with goal of reaching migration destination while maintaining healthy level of energy points
- Each level is based on interaction with one of the important factors. E.g.:
 - Find optimal foraging grounds
 - Find migration path to avoid predators or mosquitoes
 - Utilize the best conditions for river crossing
- Each level provides educational materials within the context as well as a summary upon completion
- Based on real environments and data
- The game is based on Cesium - an open-source JavaScript library for 3D globes and maps utilizing WebGL for hardware-accelerated graphics.
- We start with a mobile-friendly web app, with the goal of moving on to a VR mode

iReindeer - technology

- The game is based on Cesium - an open-source JavaScript library for 3D globes and maps utilizing WebGL for hardware-accelerated graphics.
- Cesium is an Open Source project actively developed by a large community and is free for commercial and non-commercial use. The game will also be OS.
- The app uses real imagery and terrain data, loaded dynamically as the user moves through the environment;
- 3D models of the main reindeer character are added using glTF open standard.
- We start with a mobile-friendly web app, with the goal of moving on to a mobile app with VR mode that would make the game available for use with devices like Google Cardboard or Samsung Gear.

Thank you!