\*\*Waddle: A Penguin’s Tale\*\*

\*\*Project Description:\*\*

Waddle is an immersive, educational VR game developed by Field Day Lab, designed to provide players with engaging experience as penguins living at the South Pole. Players explore the icy environment through realistic waddling movements, building nests, hatching eggs, or even picking a little fight with other penguins that might not be so friendly. Throughout gameplay, detailed movement data is captured using Oculus VR headsets. By leveraging advanced data analytics and machine learning techniques, the project aims to better understand player immersion, movement patterns, and learning behaviors within the game, ultimately ensuring an engaging and enjoyable experience.

\*\*My Contribution:\*\*

I was responsible for data preprocessing, analysis, and interpretation, transforming raw movement data into meaningful insights. My tasks included parsing and cleaning complex VR-generated datasets, performing exploratory analyses to select suitable machine learning models, and conducting extensive experimentation with multiple algorithms. I focused particularly on uncovering the relationship between players' head rotation frequencies and early quitting behavior. Utilizing advanced time-series feature extraction methods and weighted histograms, I successfully identified subtle behavioral patterns, enhancing our understanding of player interactions and retention factors, thus improving overall gameplay experience and even more importantly, providing insights into the hidden knowledge on the rotational data.

\*\*Technologies Utilized:\*\*

\* Python

\* Scientific computing

\* Data management (HDF5, CSV)

\* Time-series feature extraction

\* Quaternion and Euler transformations

\* Machine learning pipelines

\* Dimensionality reduction techniques (PCA, t-SNE)

\* Classification algorithms (Random Forest, Decision Trees)

\* Hyperparameter tuning and model selection

\* Handling imbalanced data

\* Model persistence and deployment

\* Data visualization and reporting

Library of Meialia

Project Description: Library of Meialia is a 2D Rogue-like game designed and developed by Minerva Game Studio – a student-founded indie game start-up. Player assumes the character of little dragon Amlos navigating through the enigmatic Library of Meialia to learn Magic, forge friendships, confront formidable foes and ultimately uncovers the deliberately hidden secrets that the library seals. Progression further in the game player encounter more intimidating enemies but also understand more about this exotic world. Players must tactically construct their combination of magic book and equipment to defend themselves from the relentless enemies while navigating through the library that changes its shape every time they enter. It’s a challenging journey, but always accompanied by heartwarming friends and allies.

My Responsibilities:

I am the Senior Narrative Designer for Minerva Studio, and I am also active in the Mechanics Design and Marketing process of this Game. My day-to-day job includes plot design, conversation scripting, tale writing and basically every text that builds up to this giant worldview. Although what’s worth noting is in this rogue like, we are striving to create a smooth battle experience, and this is a novel thing to investigate that’s unique to our game setting. I explored to create a mode of interaction that blends into the battle experience, and convey the hidden icecube with the small piece of mountain that’s above the ocean. This is truly challenging and exciting work.