

## **Final Project: Part 3**

### **Research Question**

What is the most ethical way to incorporate AI generation into game development and other applications development industries?

### **Methodology**

The study will be partially qualitative and quantitative in order to best measure the thoughts and feelings of current individuals within the games industry. The questionnaire will begin with simple questions about the participant in question: their name, their age, their gender, how long they've worked in the industry, and their position within the industry. We will then continue with a general opinion on the state of the games industry and on the state of artificial intelligence technology in general. And then finally, we will ask them about the concerns they have with AI generation being introduced into their workplace. Once we have collected this information as a base, we will then show the participants examples of the AI at work, allowing them to play AI generated levels through the Unity Engine and play against AI bots utilizing newer RHEA algorithms compared to their previous work with AI opponents. After having a look at the AI performance in the areas of level creation, level playability, and opponent competence, we ask the last few questions again to see if their opinion has changed after getting direct, hands-on experience with the AI. Afterwards, we ask them how they would prefer AI to be implemented into the workplace, whether they'd want to avoid its inclusion altogether, perhaps allow some limited use for individual instances of problem solving, or instead have the AI be a direct companion to the developers and their process for level and opponent generation.

Participants of this study will compromise current and former employees at several game companies ranging from smaller, independent creators to employees within larger, AAA developers. Within the industry at large having a gender gap, we will struggle to get a completely even demographic. However, because we are utilizing a fairly typical survey/interview style of data collection, we can host this questionnaire remotely, allowing for a wider variety and volume of participants. The age range of participants will likely be from 20 to 60 years old with the majority of game developers around the age of 45 years old. In order to better vet our survey, we're looking for persons within the defined age range with at least 2 years of industry experience. We'd specifically look for experience in the areas of level design, AI development, programmers, writers, animators, artists, QA testers, and UI designers. All of which are fields in which machine learning thrives from mass-sampling of designers' work and repurposing it into usable programs. Being able to classify our participants based on what work they do in the industry along with their levels of experience will allow us to better quantify our data to reach a reasonable conclusion.

The survey will be conducted as such:

1) Demographic information

a. Personal

- i. Name
- ii. Age
- iii. Gender

b. Industry demographics

- i. Employer
- ii. Position

iii. Years of Experience

2) General opinions

- a. Opinions of AI procedural content generation competency
  - i. How competent is AI in creating playable levels in video games?
  - ii. How competent is AI in play testing and completing levels without the help of a developer?
  - iii. How competent do you feel AI is when fighting human opponents?
- b. Opinions on the health of the games industry for developers
  - i. How much do you enjoy your work in the games industry?
  - ii. What is your opinion on the state of the games industry?
  - iii. How much do you think your company values your work?

3) Opinions on AI's direct industry impact

- a. Benefits
  - i. What do you think the potential benefits of introducing AI to the games industry would be?
- b. Concerns
  - i. What do you think the potential concerns of introducing AI to the games industry would be?

4) Post play-testing AI levels and opponents

- a. Immediate thoughts
  - i. How well/poorly did the level/AI play?
  - ii. What did you find interesting/impressive?
  - iii. What did you think was lacking?

b. AI workplace implementation

i. How much should AI be implemented into games development? (1–5)

1. Not at all
2. Very scarcely
3. Sometimes
4. Often
5. All the time

ii. How comfortable would you be working alongside an AI generator? (1–5)

1. Not at all
2. Very scarcely
3. Sometimes
4. Often
5. All the time

For years now, many companies have been discussing the ethical issues involved with the involvement AI within several different economic sectors. Most notably, the issues of social responsibility, transparency, and bias and fairness were the most prevalently discussed among a sample of 112 documents from a number of different companies across the world. However, would be keen to assume that the most pressing issues within this very distinct field of work would include data privacy, unemployment, and consent and autonomy. Data privacy would be important as the assets created by the developers would be intellectual property used for the monetary gain of a particular company. Having an AI involved in the creation would muddy the concept of data ownership within a field of work in which the availability of data is paramount to the creation of a product. Next is the idea of AI replacing human workers outright. While AI

may not be entirely as competent in the creation of original ideas as a human developer, the consistent generation of content via machine learning could potentially risk the redundancy of human involvement, depending on the sameness or differentiation of work between each project. And finally, many developers would likely be keen to have a level of direct control over the discretion of an AI's ability to utilize, alter, and/or create assets made by a human developer. For an AI, particularly one procured from a third-party developer, may utilize a human developer's assets without the proper permissions or copyright knowledge to do so, creating a dilemma in which a developer could have their ideas and intellectual property used by a different company entirely who simply happened to utilize the same AI.