

# 1 Introduction: Part 1

## 1.1 PROBLEM STATEMENT

What problem is your project trying to solve? Use non-technical jargon as much as possible. You may find the Problem Statement Worksheet helpful.

There currently isn't a club available to students that is dedicated to machine learning at Iowa State (AI club is null and data science isn't dedicated to machine learning). It is our goal to create a car driven by and an interface for a machine learning algorithm that can compete in Amazon's AWS (Amazon Web Services) DeepRacer League and ultimately create a league at Iowa State. This racing league gives people who may not have access to other forms of racing both the experience of getting to watch a race as well as the opportunity to learn about machine learning, an important emerging field.

## 1.2 INTENDED USERS AND USES

Who will use the product you create? Who benefits from or will be affected by the results of your project? Who cares that it exists? List as many users or user groups as are relevant to your project. For each user or user group, describe (1) key characteristics (e.g., a persona), (2) need(s) related to the project (e.g., a POV/needs statement), and (3) how they might use or benefit from the product you create. Please include any user research documentation, empathy maps, or other artifacts as appendices.

Our intended users will be students in college primarily as well as high school students interested in coding and studying computers and/or machine learning at Iowa State University. Here, we present two potential users and use cases:

### User 1: The College Student

**Persona:** John Doe is a first-year student at Iowa State University who is majoring in software engineering with minimal experience in coding before college. However, John wants to get involved in extracurriculars at Iowa State University and learn about a niche field in computer science.

**Hobbies:** Coding, racing/watching racing, cars, money making side-hustle, drop shipping

**Personality:** Curious, willing to try new things, into trading crypto, not really a computer nerd but wants to make money soon after graduation (hence software engineering.)

**Needs:** Improve and expand minimal knowledge of coding and/or machine learning, meeting new people within their major or with similar interests, apply themselves to real world applications

**Benefits:** Opportunity to get involved and meet people within their major or with similar interests, project experience for resume

### User 2: The Self-Motivated High Schooler

**Persona:** Jane Doe is a student planning on going to university and is interested in software and computers. They may have had some minimal experience with coding in high school from side projects or schoolwork, but they are still quite new at it and want to learn more.

**Hobbies:** Small coding projects, enjoys racing, complete nerd – reads a lot of technical documents, watches anime, participates in multiple extracurriculars and leads a few groups.

**Personality:** Curious, Willing to try new things and wants to learn

**Needs:** Expand computer knowledge and learn about the different areas of computer(s) they can study at the university.

**Benefits:** Opportunity to learn more about coding and machine learning to see if she would be interested in pursuing something similar in college.

### User 3: Keanu Reeves the Mentor

**Persona:** Keanu Reeves is an upper-level student who helps younger students learn more about artificial intelligence and deep learning by coaching and helping to lead the DeepRacer league.

**Hobbies:** Helping other students, TA'ing, learning in their free time

**Personality:** Curious, Willing to try new things and wants to learn

**Needs:** Looking for a leadership role to improve their leadership skills,

**Benefits:** Opportunity to help others and themselves learn more about coding and machine learning, Opportunity to mentor underclassmen and boost resume