

Intro to AI

Mini-Project

Virginia Tech CS 4804 Fall 2022
Instructor: Yinlin Chen

Mini-Project

- Team project: at most 4 students
 - Teams: Canvas -> People -> Groups
- Competitive programming project
- 10% of the semester score, with bonus points
- Task: Use techniques learned from class or outside the class to solve AI problems
- Goal: Gain practical AI experience
- Deliverables:
 - Code submission (from now – 12/04)
 - Class presentation (due 11/28-12/02 week)
 - Final report (due 12/04)

AWS DeepRacer Race

- Three type of races
 - Time trial race (Open 10/20/2022, 5 PM EDT)
 - <https://tinyurl.com/29zxzedu>
 - Head-to-bot (Opening soon...)
 - Object avoidance (Opening soon...)

AWS DeepRacer Student account

- <https://student.deepracer.com/home>
- No credit card information need
- It is free, 10 hours per month

Sign Up

Sign up link:

<https://student.deepracer.com/home>

Please use your vt.edu email.



AWS DeepRacer Student

Get rolling with machine learning

Sign in

If you have created an account for either [AWS DeepRacer multi-user mode](#) or [AWS BugBust](#) use those credentials to sign in. AWS DeepRacer multi-user mode and AWS BugBust both use an AWS Player accounts. For more information about AWS Player accounts, see [What are AWS Player accounts?](#)

Email address

Password

☐ Show password [Forgot password?](#)

Sign in

Don't have an account? [Sign up](#)

Verification



AWS DeepRacer Student

Get rolling with machine learning

Enter the six digit code you received via email

If you haven't received an email within a few minutes, check your spam folder. Verification codes expire after 15 minutes.

Verification code

Resend code

Verify

Welcome to AWS DeepRacer Student



Use AWS DeepRacer Student to learn the foundations of machine learning (ML), qualify for scholarship opportunities, and compete for prizes with your friends in the AWS DeepRacer Student League.

Almost there! We need a few more details before you're off to the races.

I will do this later. Sign out for now

Complete sign-up

Finish Sign-Up

Complete sign-up for AWS DeepRacer Student [Info](#)

To start using AWS DeepRacer Student, we need a few more details.



Add your personal information to create your AWS DeepRacer Student account.

First name

Ming

Middle name - *Optional*

Middle name

Last name

Zhu

School

Can't find your school on the list? Choose **Other** to type.

Virginia Polytechnic Institute and State University (Vir... ▼

Current or prospective major

Can't find your major on the list? Choose **Other** to type.

Computer Science & Programming ▼

Planned year of graduation

Enter the year that you will graduate.

Year of graduation must be between 2022 and 2030.

☒ I certify that I am a student enrolled in high school, university, or community college or an educator or event organizer for students in high school, university, or community college.

Country of residency

United States ▼



Welcome to AWS DeepRacer Student Info

Hi Ming! Get started by learning the fundamentals of ML

Lesson 1: Introduction to machine learning

In this lesson you will learn the fundamentals of the machine learning (ML) process and explore case studies using ML. When finished, you will understand when and how machine learning can be used to solve a problem.

[See all chapters](#)

Track your scholarship tasks

Available now

To prequalify for a scholarship:

Complete all **learning modules** (recommended)

 [Not started](#)

Take **AWS AI & ML Scholarship quiz** and score at least 24/30

 [Not started](#)

Train a model to finish the track in under 3 min.

 [Not started](#)

Resources

[AWS DeepRacer Student League User Guide](#)

[Discord community](#)

[AWS DeepRacer website](#)

Practice your machine learning knowledge



Model training hours remaining

To participate in the Student League, you need to train models and submit them to the leaderboard. When you either train a new model or clone an existing model the time required to train it counts against the overall total. Starting March 1, 2022 all users will

Learn Practical AI experience

- Resource has limit
- Money matters (No unlimited tries and errors)
- Submit for training when absolute necessary

Class Presentation

- A short class presentation with Q & A
- Present your solutions, demos, and results
- Lesson learned

Final Report

- Presentation slides
- Code
- Supplement document

Grading

- All group members will receive the same score for a project.
 - Find collaborative partners
 - Practice teamwork & leadership
- Top three teams for each type of race will have bonus points

Project Schedule

- Code submission (from now – 12/04)
- Class presentation (due 11/28-12/02 week)
- Final report (due 12/04)

Amazon Deep Racer Resources

- [AWS deep racer intro.](#)
- Tips: <https://aws.amazon.com/deepracer/racing-tips/>
- Workshop: <https://catalog.workshops.aws/deepracer-2001/en-US>
- GitHub, tech articles & blogs, etc.