Deep Learning Nanodegree Handbook

Bertelsmann Technology Scholarship

March 19, 2020

CONGRATULATIONS!!!!!

You did it!

You're moving on to Phase 2! 🎉

Nanodegree Overview

Nanodegree Project Summaries

- **You must complete and pass these in order to graduate!**
  - *Deep Learning Nanodegree has **5 technical projects***
- Each project will have a brief **project overview** outlining the project.
- Each project will also have a **project rubric** — a list of specifications you are expected to meet.
- When your project is ready, follow instructions and formally **submit your project for code review.**
- **Take your projects seriously** and use them to solidify your own knowledge and mastery of the skills and concepts you learn throughout the Nanodegree program

Advice from
our Tech Coaches

Project 1: Predicting Bike-Sharing Patterns

Objective: to build and train neural networks from scratch to predict the number of bikeshare users on a given day.

Required libraries: PyTorch, Panda, Numpy, Matplotlib

Tips & Tricks to optimize neural network:
- Tuning neural network hyperparameters may require an iterative trial-and-error process. The trick is to run a series of experiments and identify which hyperparameters you are tracking against the performance metrics to find the optimal hyperparameters.
- Usually the bigger and deeper your neural network is, the more accurate the results are. However, it may also lead to overfitting where your neural network model is not able to generalize well on test dataset although it achieves high accuracy score with the training dataset.
- Before your solution is submitted to a reviewer, you will need to submit your project to Udacity's Project Assistant. There are time and resource limitations set in Udacity auto-grader server. If your neural network hits a timeout, you can reduce the number of nodes and hidden layers. If you find any difficulty, please visit Project Assistant's troubleshooting page.

Top 10 Tips for Finishing Early

1. Rely on the Community
2. Take notes
3. Take short breaks
4. Study a few hours every day
5. Remember why you are here
6. Manage your time
7. Focus on concepts
8. Refuel
9. Keep moving when it gets hard
10. Focus on projects!

You've got this!

TOP 10 TIPS TO FINISH EARLY

1 RELY ON THE COMMUNITY
"Reach out to the community if you need help. No man is an Island." _Tam Tolofari
"Lean on and learn from the community. There are tons of resources shared or created by other students to help you." _Pavitra Chari

2 TAKE NOTES
"Handwritten notes help you commit more information to memory and make the material easier to understand." _Maxwell Martin

3 TAKE SHORT BREAKS
"I take breaks as a reward for my work." _Victor Babaniyi
"Use the Pomodoro technique. Study in intervals of 25 minutes followed by 5 minutes breaks." _Carlo David

4 STUDY A FEW HOURS EVERY DAY
"Be input oriented and not output oriented. Don't say: 'I will finish lesson 2 today.' Say: 'I will study 2 hours today'." _Carlo David

5 REMEMBER WHY YOU ARE HERE
"Remind yourself of how happy you were when you got selected for this opportunity and hold on to that feeling." _Calincan Mircea Ioan

6 MANAGE YOUR TIME
"Make 'Have to do', 'Should do' and 'Want to do' lists and go through them in that order." _Yaroslav Porshnev
"Turn off distracting apps and focus on studying." _Marek Przybyłowicz

7 FOCUS ON CONCEPTS
"Don't get stuck up on details. Try to get general understanding of the problem." _Marianna Janczak
"You don't need to remember all the codes or formulas. Just understand the concepts behind them and know how they work." _Mohamed Nagy

8 REFUEL
" Sleep, socialize, watch TV, exercise, refuel! With the course, go all in, but remember: you can't go anywhere without fuel." _Anna Unger

9 KEEP MOVING WHEN IT GETS HARD
"Don't get stuck on any topic. If you don't understand something, try moving on and come back later." _Sara Lane
"If you don't understand a topic, don't panic. Go back 1 or 2 videos." _Florin Cioloboc

10 FOCUS ON PROJECTS
"Read through each project's introduction before starting a lesson to get an understanding of the requirements and keep those in mind as you go through the lesson." _Berenice Terwey

"You were one of the lucky applicants to be selected from [thousands of] people so we know you have what it takes!" _Brenda [Udacity Community Manager]

Resources

***Additional Resources*:**

- MLFlow is one of the open source tools to automate hyperparameters tracking. The use and scope of this tool is outside Udacity Deep Learning Nanodegree program. However, if you are interested in learning more about MLFlow, you can visit this website.

FAQs

Frequently Asked Questions

Q. Will I be penalized for missing a project deadline?

A. The projects are soft deadlines - no penalties if you miss them! However, we recommend staying as close to them as possible to ensure you graduate by your final program deadline of **September 17th, 2020.**

Q. Am I doing something wrong if my project doesn't pass on the 1st try?

A. Don't be disappointed if your project doesn't pass on the first try. Use it as a learning opportunity. Projects normally take 2-3 submissions before they pass.

Q. When will I receive my Nanodegree certificate?
A. Once you have completed and passed all your projects, you will be prompted to go through the graduation process. Upon graduation, you will receive an electronic certificate that can be accessed through your classroom.

Frequently Asked Questions (Cont.)

Q. How do I graduate?
A. You will graduate once all technical projects have been submitted, *you must complete every technical project in order to graduate - no exceptions!*

Q. Do I need to complete all concepts and quizzes to graduate?
A. No. You can still graduate even if you skip concepts or quizzes. However, many of these are important in helping you solidify your understanding of the concepts you will apply in the projects, we recommend completing all of them.

Q. Are the concepts and projects in Phase 2 more difficult than in Phase 1?
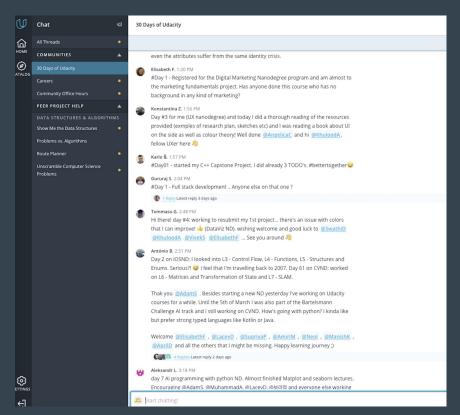A. You may find certain projects more difficult than others, and students generally report that Phase 2 is more challenging overall. But remember, you have lots of support from your community and Udacity, so don't give up even if you feel discouraged!
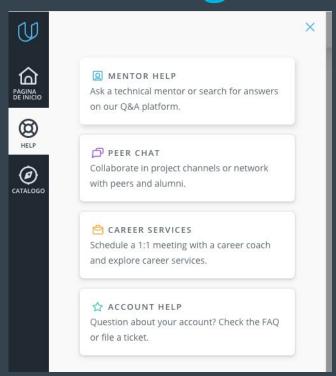
Phase 2
Resources

Student Hub

The in-classroom chat platform that connects you with fellow students (This is your new "slack space")
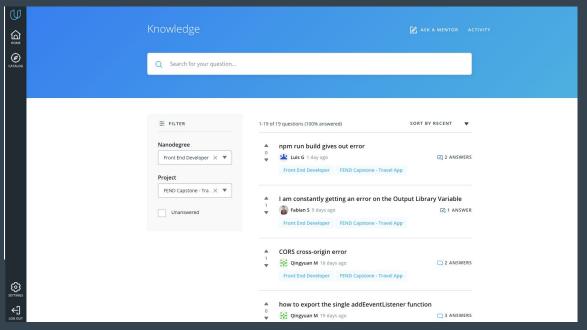

Community Channels

- 30 Days of Udacity
  - Take the pledge!
- Careers
  - Attend AMA events and receive career advice *(Students have access to this channel)*
- Community Office Hours
  - Grow your network by connecting with students from NDs
  - This is your sendoff to your Community Team
  - Jordan & Prerona's office hours!
  - Stop by weekly Community Office Hours
- Project Channels
  - Connect with all students in your Nanodegree program

Knowledge

Knowledge is designed to assist you with your technical questions!
Open 24/7 — Mentors are here to help you!

When does Phase 2 end?

The deadline for completing is **September 17th, 2020.**

Do I need to complete all the coursework?

Yes, if you want to graduate. All coursework must be complete by **September 17th, 2020**

Best of luck!!!

I have several questions.