

Machine Learning Engineer Course

– Orientation –



DIVE INTO CODE

Thursday 4, March 2021
Hiroyoshi Noro



Agenda

- 1. Orientation**
- 2. Self Introduction**
- 3. Slack invitation**
- 4. GitHub/Assignment Submission**
- 5. Feeling Share**



Introduction

**Why do you want to become
a machine learning engineer?**

What are your beliefs?



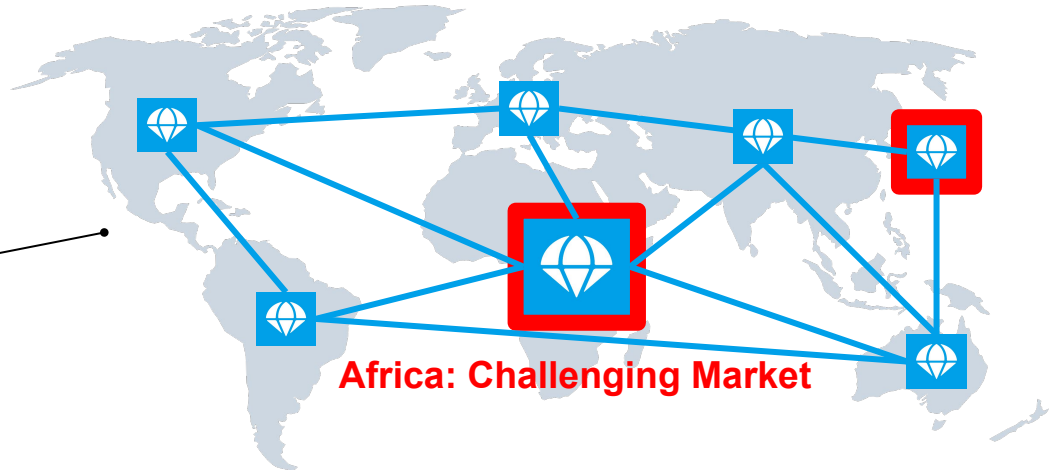
Introduction

Creating a society where everyone can play an active role by using technology as weapons.

Vision

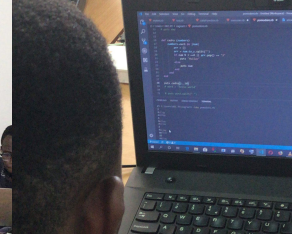
Mission

Value



Opportunities through the power of IT education and be No. 1 in the number and quantity of places to grab

Visualize how to work as a professional engineer.
Create opportunities to notice the gaps between them and the professionals, and provide support for their own growth.



"We first started to solve problems in Rwanda, the challenging African country."

There are people all over the world who want to use technology as a weapon !



Introduction

**DEMODAY “Your growth and output presentation”
For Japan/Sierra Leone Government and Companies**





Introduction

Lecturer and mentors with a variety of backgrounds will support you in your challenges.



Lecturer:
Hiroyoshi Noro



Mentor: Diop



Mentor: Alioune



Mentor: Jules



Mentor: Cedrick

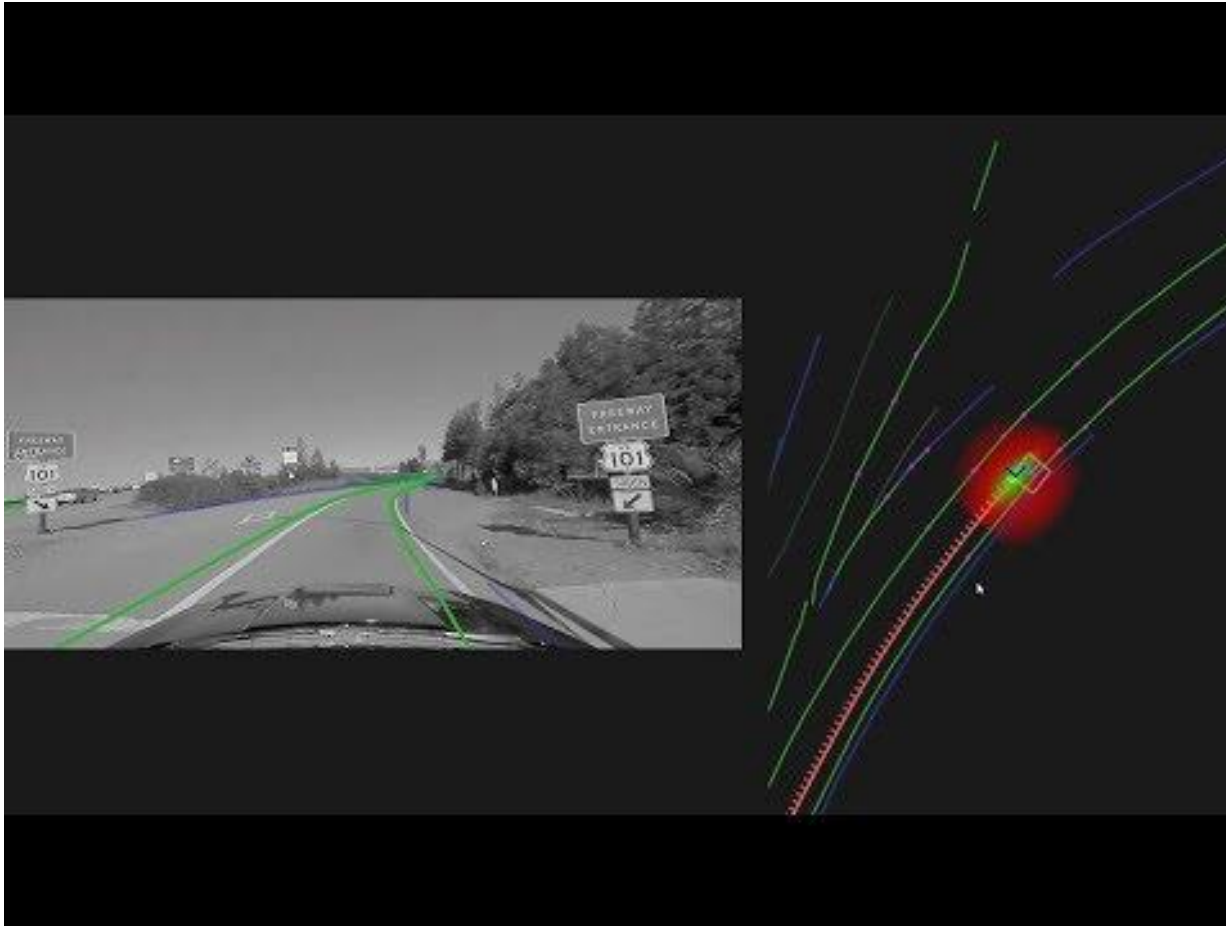


Mentor: Robert



What you can do

NVIDIA DRIVE—GTC 2018 Demonstration





What you can do

Google Duplex Demo from Google IO 2018 (01:08 start)





What you can do

Japanese Graduate “Self-service cash register using Raspberry pi”





Essential Value of Course

Two essential values: As a Machine Learning Engineer

- 1. Developing **problem-solving** skill**
- 2. Creating **human network****



Problem Solving Ability

Why problem-solving ability is important?

Problem-solving
ability

Thinking ability

Immutable
(universal)

Knowledge

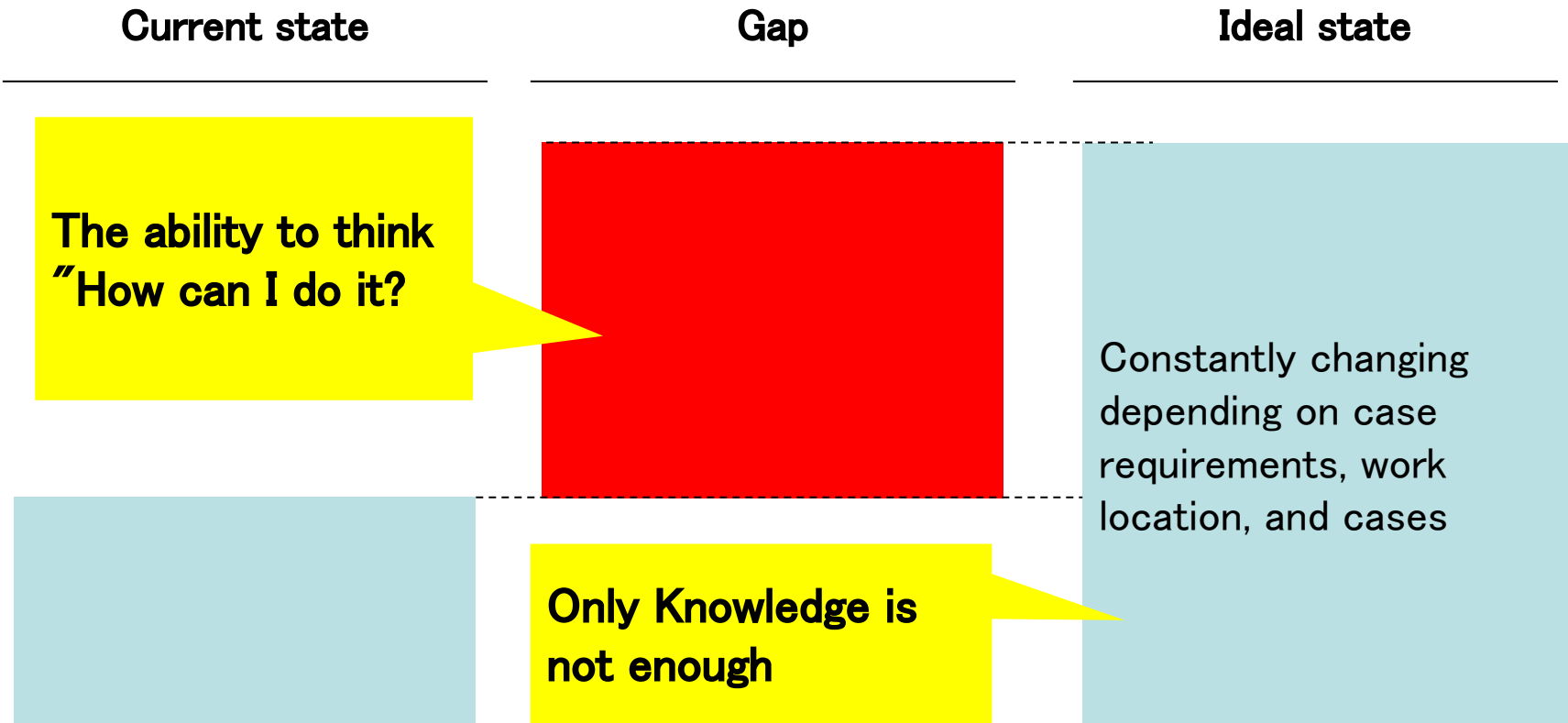
Memory

Variable
Partially unchanging



Problem Solving Ability

Problem solving ability is for finding the gap between ideal state and the current state and think the solution.





Problem Solving Ability

What is the most important piece of knowledge?

Examples of Variable Knowledge

- Function (method) name
- Conventions (naming conventions, etc.)
- Types of machine learning methods

It's important, but there's no limit to how much you can remember...

Examples of Invariant Knowledge

- Algorithmic thinking
- Concept of good coding
- Concept of Machine Learning

Once these are mastered,
variable knowledge will follow

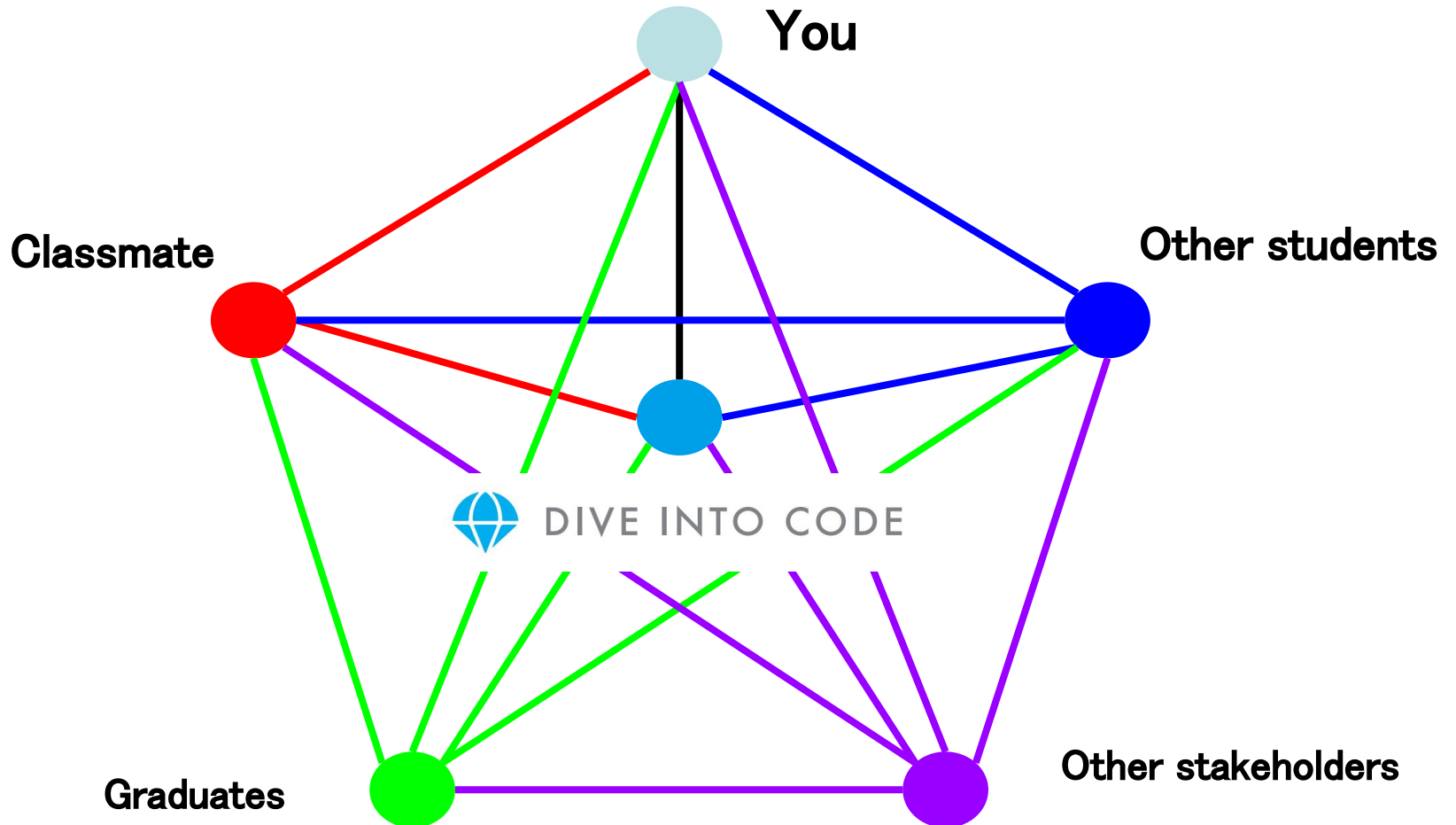


Learn to think and improve your thinking skills



Human Network

Maximizing knowledge through human networks





Essential Value of Course

Two essential values: As a Machine Learning Engineer

1. Developing **problem-solving skill**

2. Creating **human network**



Curriculum

The curriculum is designed to work backwards from the goal. Think a few steps ahead as you run.

Goal

Become a Machine Learning Engineer

Term3

Define the problem and be able to solve it in time

Term2

Be able to recognize current problems and apply existing solutions

Term1

Learn classical theories and acquire best practice

Introduction

Learn how to think with tools



Term3

Define the problem and be able to solve it in time

- Research
- Formulate a hypothesis
- Know the conditions
- SQL
- Data Set Creation
- Docker
- Raspberry Pi
- Publish



Term2

Be able to recognize current problems and apply existing solutions

- Deep Learning
- Image Recognition
- Natural Language Processing
- Paper reading
- Code Reading
- OSS
- Frameworks



Curriculum

Term1

Learn classical theories and acquire best practice

- Supervised Learning
- Unsupervised learning
- Scratch
- Kaggle



Introduction

Learn how to think with tools

- Programming (Python)
- Mathematics for Machine Learning
- Exploratory Data Analysis
- Fundamentals of Machine Learning
- Object Orientation



Important way of thinking

Learn how to think with tools

	© Good	× Not Good
1	Ask yourself, "What could I do with it?"	You stop and say, "I haven't learned that yet."
2	You wonder, "Is this really happening?"	Believing too much that "It was written in ○△".
3	Move your hands and say, "Let's try it first."	I'm cautious, "I'll do it when I know more."



Graduation Requirements

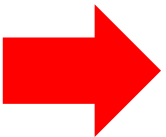
Students will graduate by fulfilling the graduation requirements within the course deadline.

1. Attendance of 80% or more

2. Passing all assignments

3. Passing the graduation project

✂ Assignments must be evaluated by a mentor in office hours during the period



**After graduation, the real work begins!
Let's build up our strength!**



Approach (Introduction term)

- Solve the DIVER pre-class assignment by the due date.
- Participate in class and work on class assignments. Pair programming.
- Put the solved assignments on GitHub and submit them on DIVER.
- Mentors will send you an acceptance letter or a request for revision.
- Students are welcome to learn anywhere except on class days.
- Discussions and study sessions that go beyond the scope of classroom assignments are encouraged.





Approach (Term1–Term2)

- Work on the Sprint assignment in DIVER. 2 days is the basic unit.
- Assignments will be submitted in the same manner as in the prior study period.
- Self-study in the classroom from morning until night.
- We will discuss and ask questions as needed, and there will be time for presentations in the evening.
- If the assignment is completed early, students will be challenged to do something other than the assignment.



Approach (Term3)

- This will be an engineering project, and students will be challenged to create products individually and in groups.
- The basic concept is the same as in Term 2, but this is a time to challenge various things more freely toward graduation.



Approach

Outside of the assignments, there is often time for student-led lightning talk (LT) format

- Introduction to academic paper**
- Introduction to Kaggle's Kernel**
- Report on job hunting activities**



**Anything else related to the Machine Learning course is welcome!
Let's actively plan and participate in the course.**



Introduction (again)

**Why do you want to become
a machine learning engineer?**

What are your beliefs?



Essential Value of Course (again)

Two essential values: As a Machine Learning Engineer

- 1. Developing **problem-solving** skill**
- 2. Creating **human network****



That's all for this orientation.

**Do you have any concerns or questions
about the course?**



Slack

- One of the chat tools.
- It is actually used as a communication tool in development companies and engineering communities.
- It is also used as a way for DIVE INTO CODE mentors to contact you.



- Only your peers and mentors can see the channels during the course period. Please feel free to use it as if you were talking in a classroom.
- The `general_ml` channel is open to everyone involved in the machine learning course. For example, you can use it to share good information or call for a study session.

Start with the emoji stamps! Let's stamp a lot.





Slack

Let's try using Slack!

Please standardize the notation of the display name (Display name).

Official notation:

Full-time student

MEPYYYMM_Name

(Last Name_First Name)

Example: **MEP2103_NORO_hiroyoshi**

The screenshot shows the Slack interface with several red boxes and numbers indicating steps for editing a profile:

- ① Click your name**: A red box highlights the user's name 'mentor_tominaga' in the top navigation bar.
- ②**: A red box highlights the 'プロフィールを編集' (Edit Profile) button in the top right corner.
- ③**: A red box highlights the '編集' (Edit) button in the bottom right corner of the profile card.
- ④**: A red box highlights the '表示名' (Display Name) input field in the profile editing form.

The profile editing form shows the following fields:

- 氏名 (Name): mentor_tominaga
- 表示名 (Display Name): 表示名



How to use Slack

【Work】Let's use Slack ! (5 minutes)

- 1. Mention the person next to your seat in the course channel and post a greeting, such as "Nice to meet you."**
- 2. Let's add some kind of emoji stamp to the post where the neighbor says "hello"**
- 3. Let's try decorating text (bold, red, borders) (bold: enclose with asterisks, red: enclose with backquotes). (Bold: enclose with asterisks, Red: enclose with backquotes. Borders: surround with three backquotes.**
- 4. Let's send a direct message.**



How to create a GitHub account and submit assignments

Create an account and submit assignments

1. Read “Creating a GitHub account” in Introduction to Git 2 to create an account, set up an ssh key, and create a repository.
<https://diver.diveintocode.jp/curriculums/1395>
2. Follow the steps to register your README.md file in the repository on GitHub! This step 2. is how you submit your assignment!

You can discuss how to proceed with your neighbors if you want! ^^.
If you’ve already completed it, let’s assume that the assignment file test.txt is complete and push it! ^^^.



How to create a GitHub account and submit assignments

● Commands to use as an assignment submission method

Basically, you can register to the repository by following the steps below.

1. `git add file name`

→ "file name" is the name to register

The name of the destination folder or file should be in English.

2. `git commit -m "week0"`

→ In "week0" part, you can add message

Make the message easy to understand what you have done.

3. `git push origin main`

→ Command to register the added file to GitHub.

Submit your work in this way until you get used to GitHub.

Also, if you edit or move files on GitHub, it may break the repository, so be sure to use Linux commands.



Next session

Next session will be Zoom online lecture

Date: Thursday 11 March 2021 19:30~20:30

AND Zoom online tutorial mentoring session

Date: Friday 12 March 2021 19:30~20:30

**Location: The Zoom URL will be posted to the
mep2103_hcmut channel on Slack.**

**Homework: Week 1 pre-class assignments will be tied to the
DIVER and should be completed by the next class.**



Feeling Share (1 minute per person)

Check out is to share your feeling

- How you feel today (excited, happy, angry, sad, etc.)