Machine Learning Engineer Course

－ Orientation －

DIVE INTO CODE

Thursday 7, January 2021
Hiroyoshi Noro

Agenda

1. Orientation

2. Self Introduction

3. Slack invitation

4. GitHub/Assignment Submission

5. Feeling Share

Why do you want to become
a machine learning engineer?

What are your beliefs?

Introduction

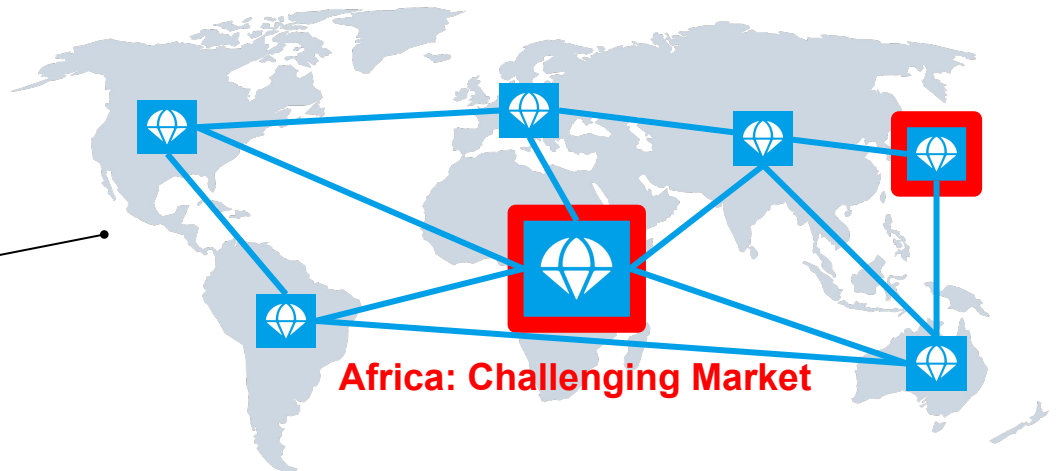Technology for all. Creating a society where people can be active as weapons.

Vision

Mission

Value

Africa: Challenging Market

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.

4

"We're 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

NORO Hiroyoshi
Born October 6, 1980 in Odawara, Kanagawa

Representative Director of DIVE INTO CODE Corp.

GLOBIS Graduate School of Business Administration (MBA) Completed

Founded "DIVE INTO CODE" in 2015. Aim to provide IT education and employment opportunities to all countries in the world. Started IT engineer education in Rwanda from August 2017. Produced graduates who are active as IT engineers. In 2020, won the 16th "GLOBIS Alumni Award" Creative Category.

Have a lot of experience teaching new service launches, changing jobs to IT engineers for adults, and programming education.

Introduction

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

Lecturer：
Hiroyoshi Noro

Mentor：Diop
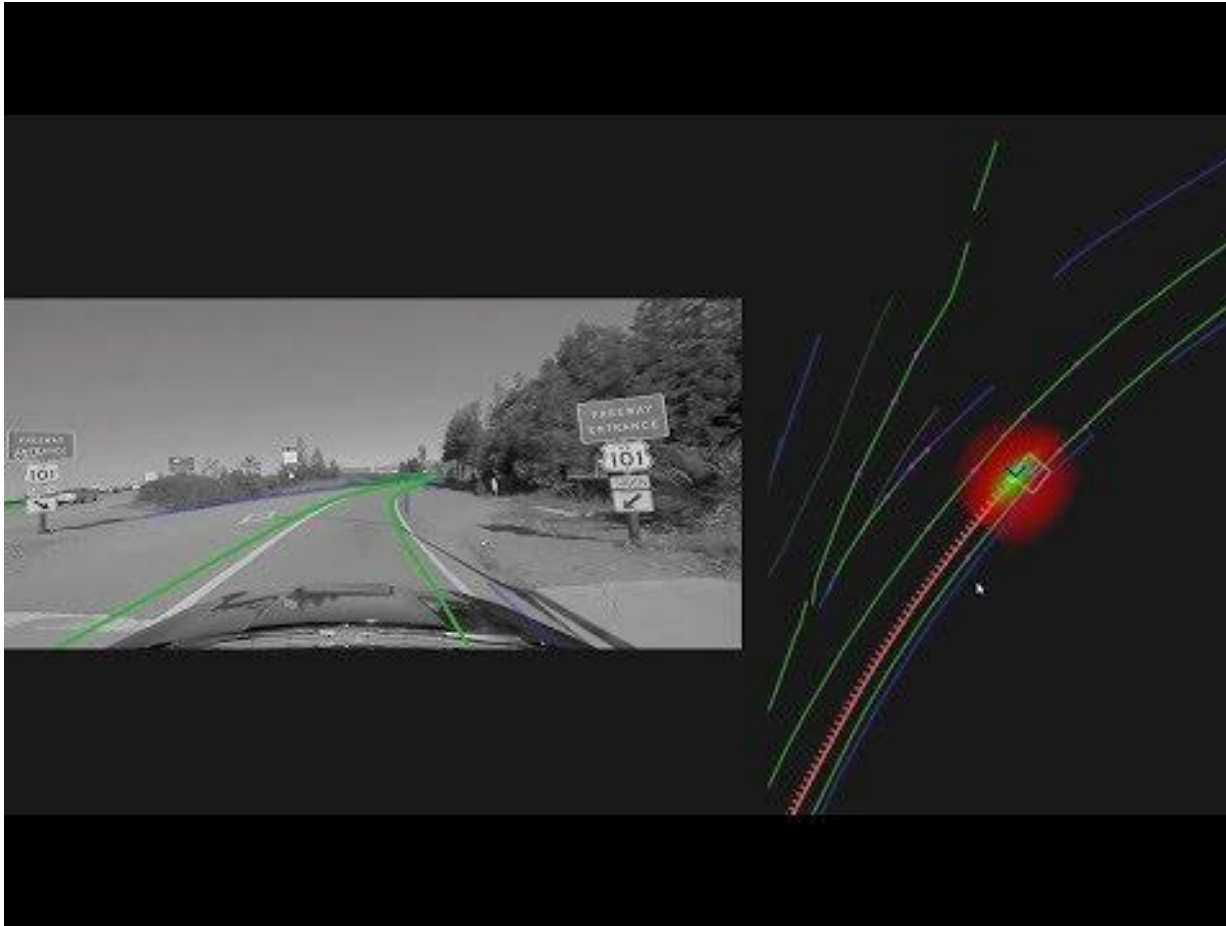

Mentor：Alioune

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）

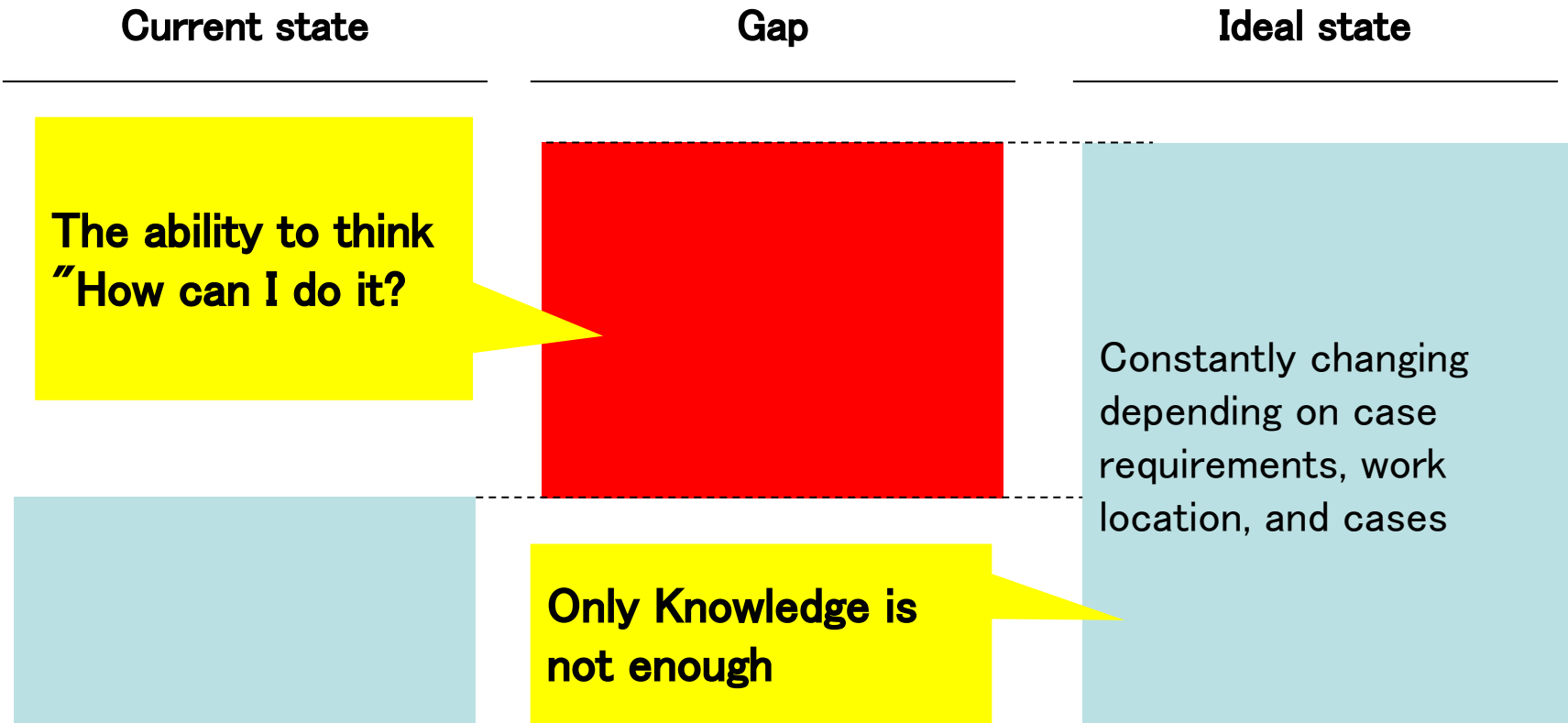Knowledge

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.

Current state	Gap	Ideal state

The ability to think "How can I do it?

Only Knowledge is not enough

Constantly changing depending on case requirements, work location, and cases

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

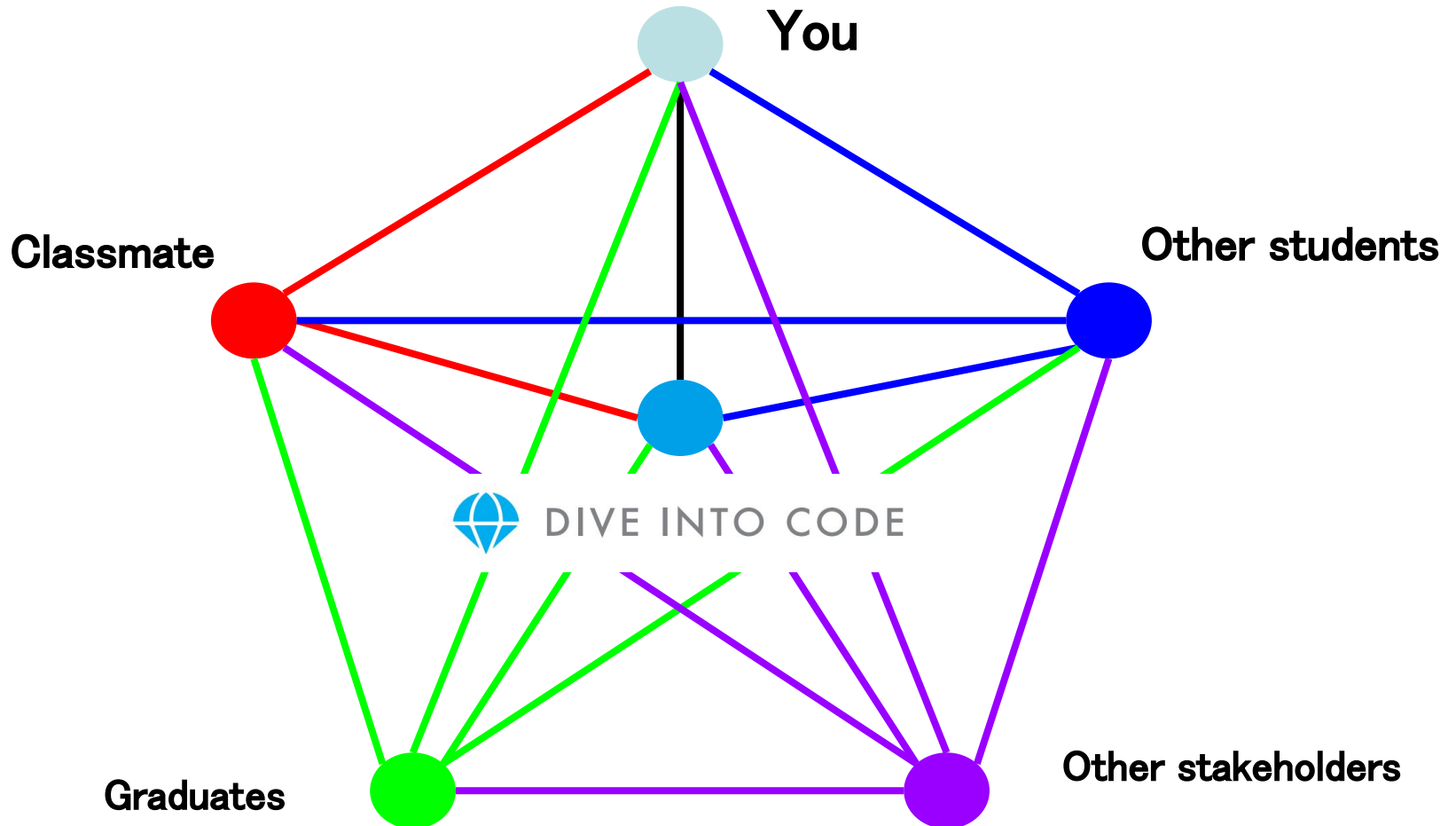Once these are mastered, variable knowledge will follow

➡️ **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

Curriculum

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

Curriculum

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

Curriculum

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 〇△".
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
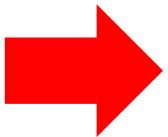
After graduation, the real work begins!
Let's build up our strength!

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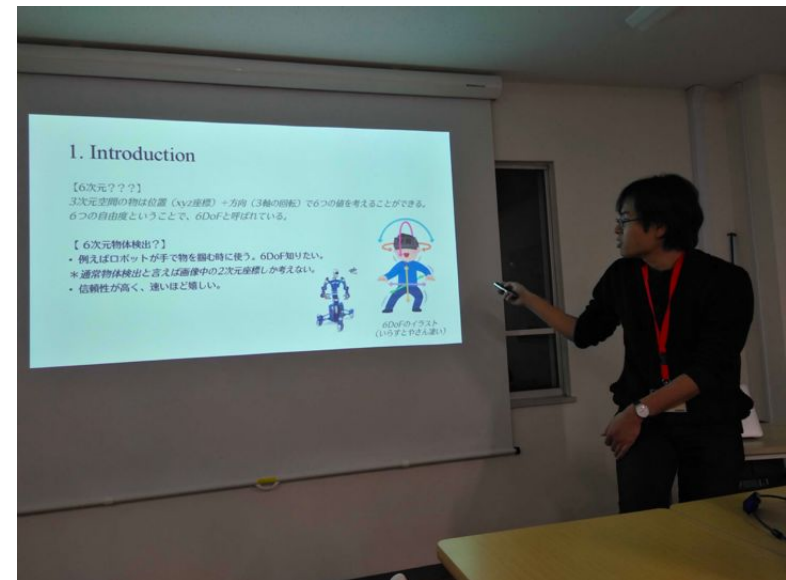
Anything else related to the Machine Learning course is welcome!
Let's actively plan and participate in the course.

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

Q&A

That's all I have to say as an 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.

Slack

- 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
MEFYYMM_Name
(Last Name_First Name)

Example: MEF2010_NORO_hiroyoshi

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 14 January 2021 11:00~12:00

Location: The Zoom URL will be posted to the mep2101_unimtech 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（1minute per person）

Check out is to share your feeling

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