

# TU Robotics Team Activity Report

December 14, 2018

Progress Report on Student Projects  
Partly Supported by Boeing Higher Education Program

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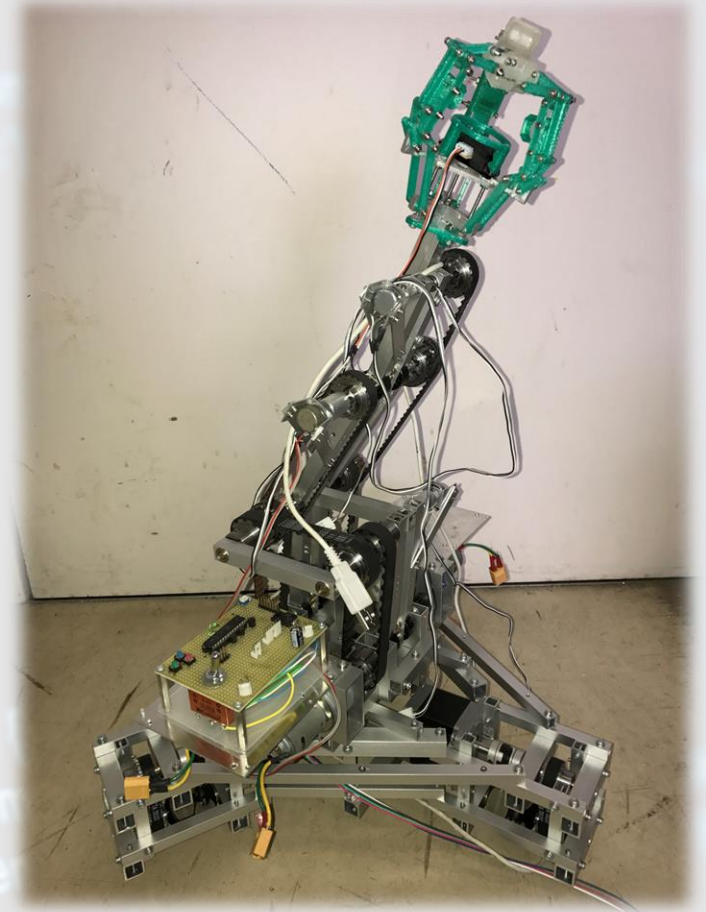


# Outline

1. About us

2. Our activities & results

3. Aims for the next year

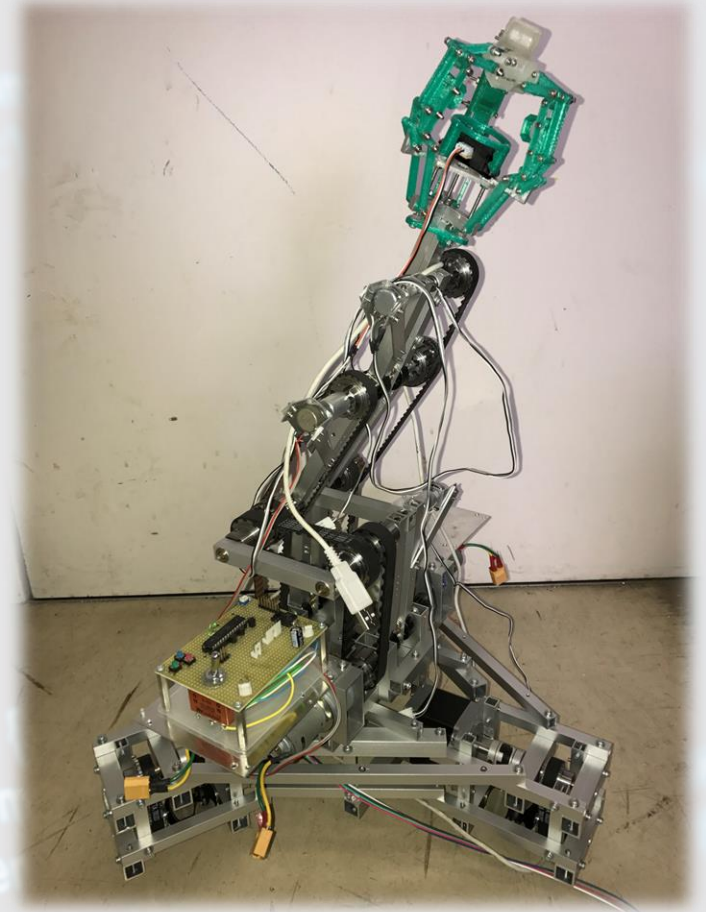


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# 1. About us – Who are we?

## Our purpose...

“Enhance our engineering skills together  
**through enjoying creating robots**  
and other mechanical/electrical systems”

## Consists of three branches...

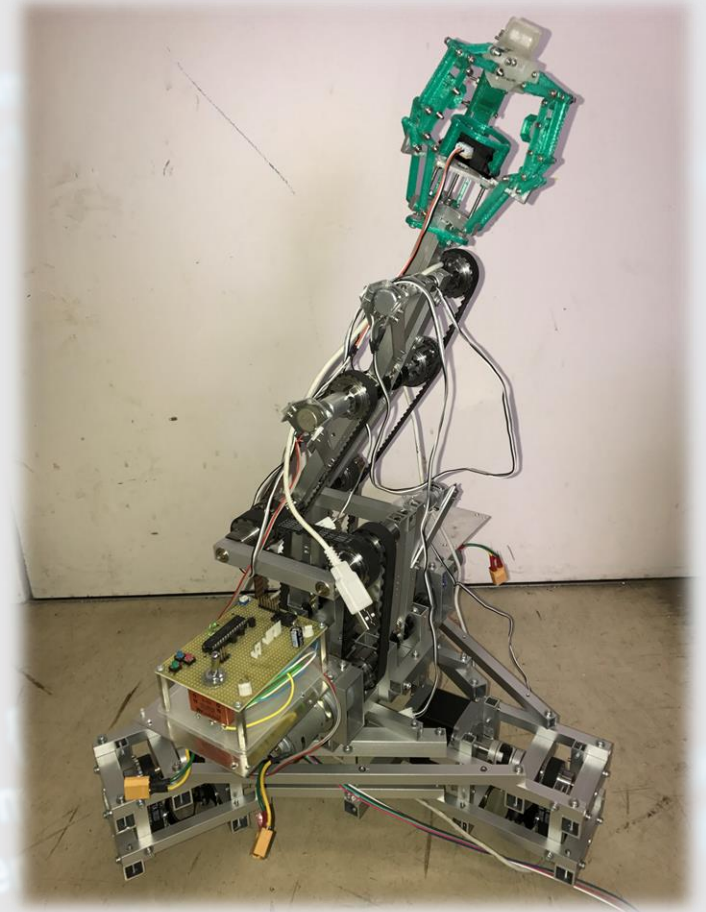
Tohoku University Engineering Seminar : **mainly software**  
Material System Seminar : **mainly hardware**  
Autonomous Control Seminar : **mainly electrical circuit**

# Outline

1. About us

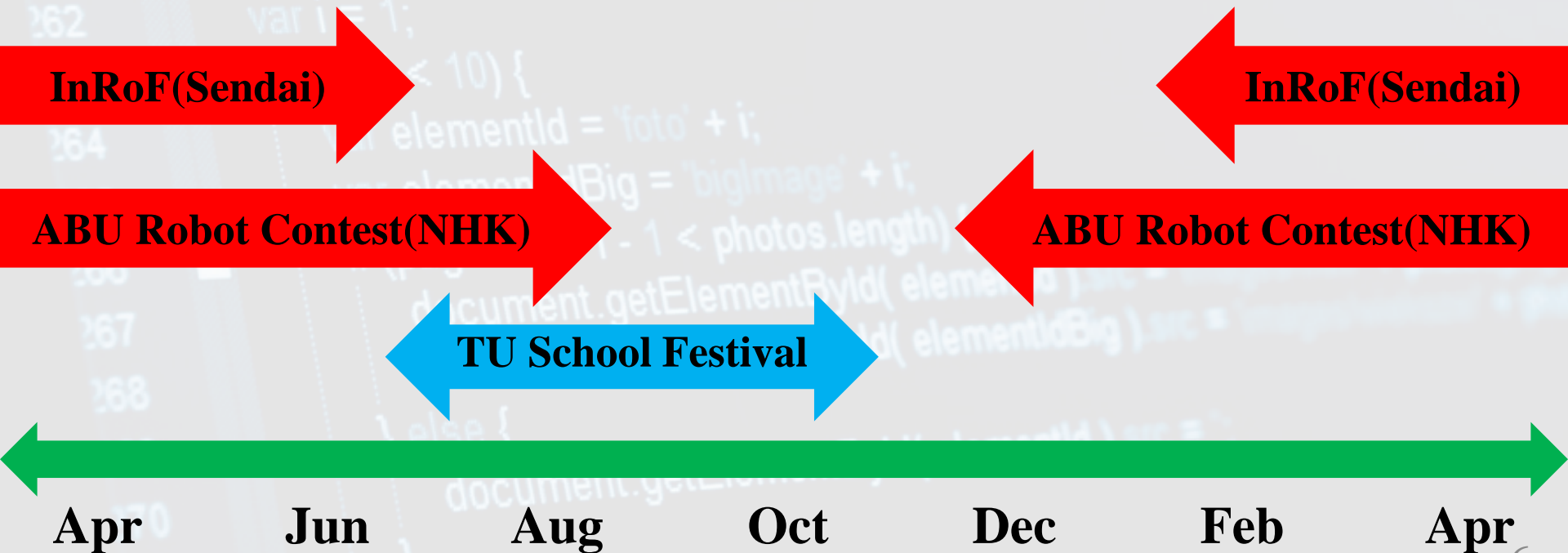
2. Our activities & results

3. Aims for the next year



## 2. Our activities

1. Create robots for robotic competitions
2. Create display items for exhibitions
3. Try to create whatever attractive



## 2. Our activities – InRof (Sendai)

InRof: **I**ntelligent **R**obot Contest **F**estival

Construct **fully autonomous robots** capable of:

- Tracking a route to the color balls on the field
- Picking them up and recognizing their color
- Putting them into the color-corresponding goals

Held in June 15<sup>th</sup> and 16<sup>th</sup>, competition for anyone

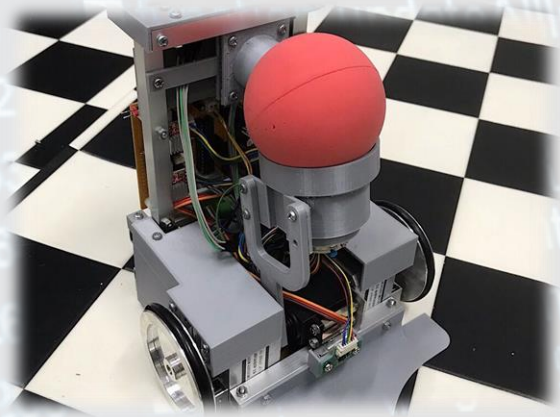
Purpose:

- Technical tutorial for freshman members
- Brainstorm of ideas for curiosity-oriented robots

## 2. Our activities –InRof(Sendai)

2019's Result:

- Some team got points
- 1 team could advance the 2<sup>nd</sup> qualifying match





## 2. Our activities –ABU Robocon (NHK Robocon 2020)

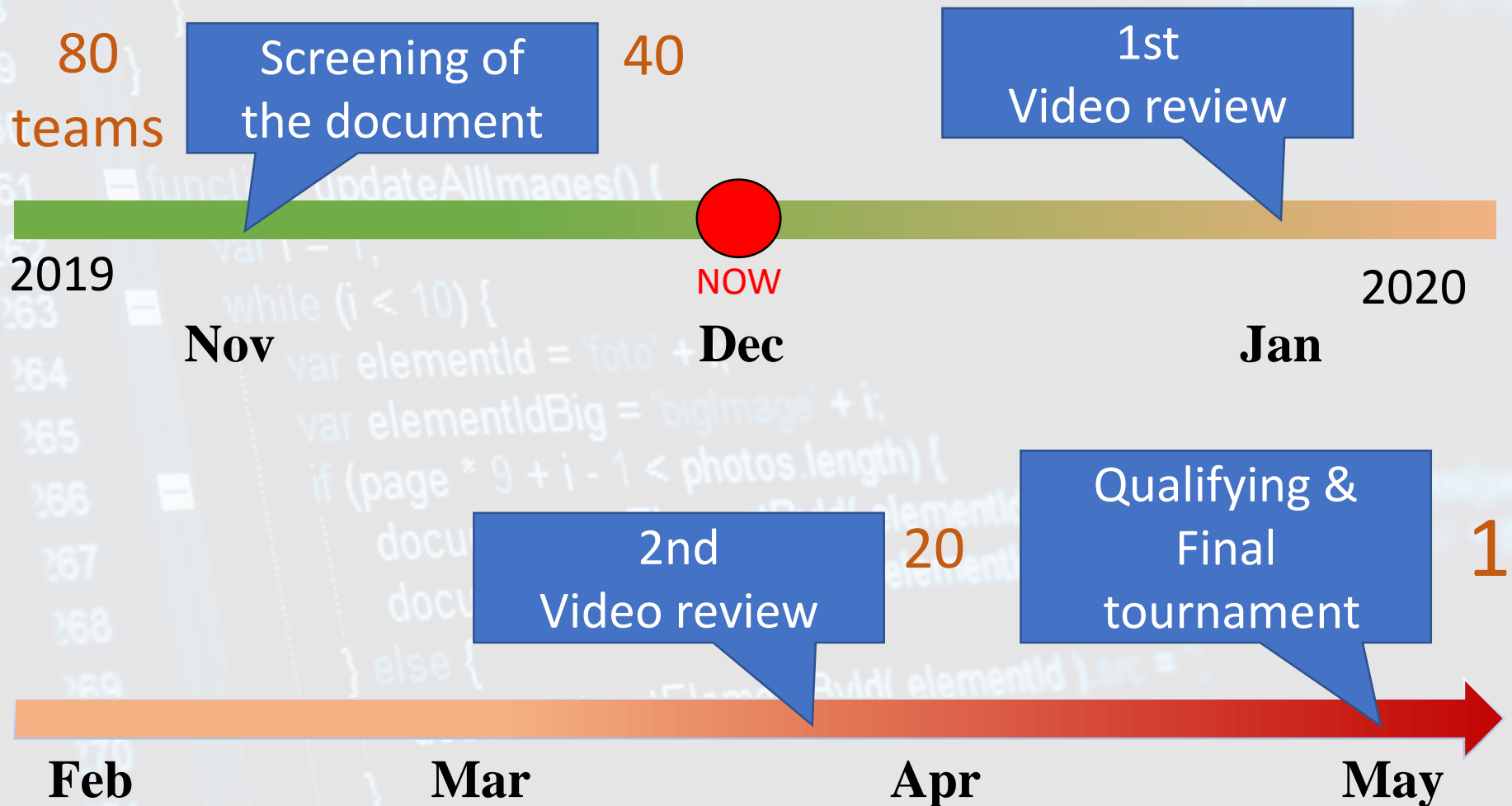
Contest Theme

“ROBO RUGBY”

- Make two robots, **Pass Robot** (PR) and **Try Robot** (TR)
- Pass a rugby ball to a TR from PR and,  
TR **kicks** it to a goal or score a **try**
- Held in August 21<sup>th</sup>, competition for universities
- Purpose: Try to build a large, highly sophisticated robotic system together with many co-workers

# 2. Our activities –ABU Robocon (NHK Robocon 2020)

## Schedule



## 2. Our activities –ABU Robocon (NHK Robocon 2020)

Prototype of Kick mechanism

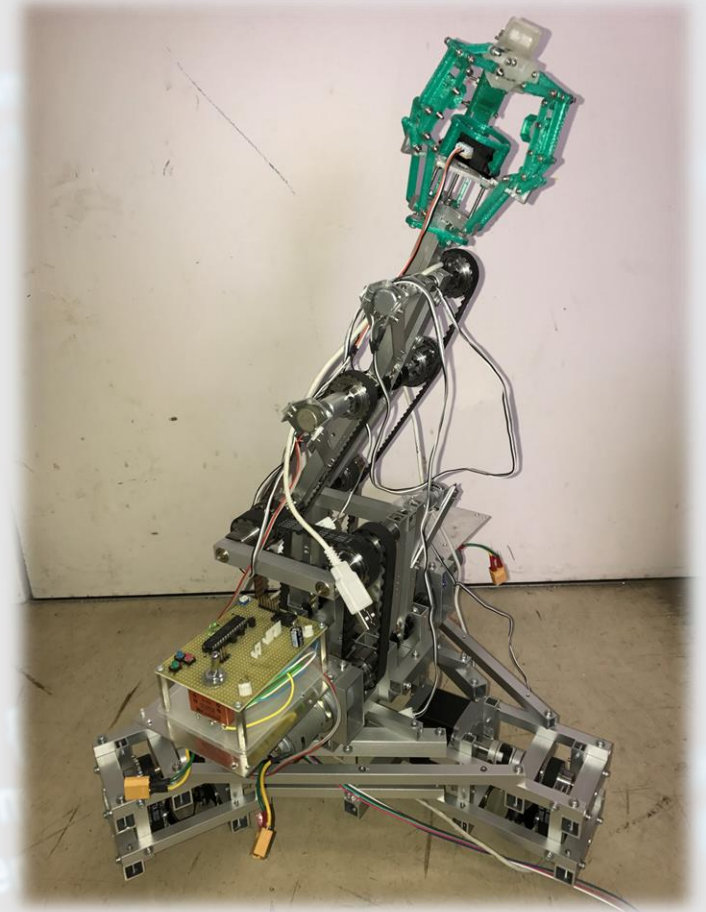


# Outline

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3. Enrichment of our  
working environment



# 3. Enrichment of working environment

## 1. Band saw

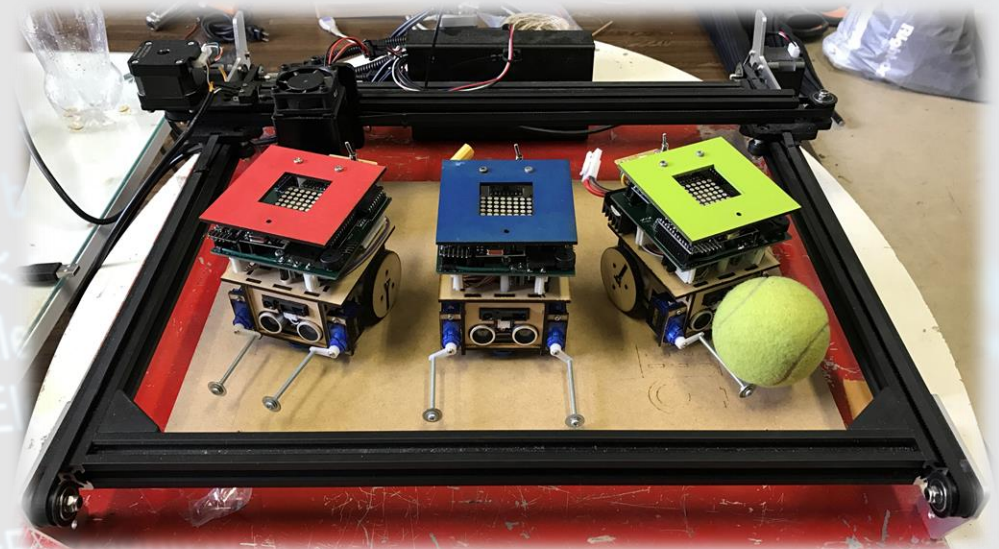
Cut material diagonally

## 2. laser cutter

Cut material boards for structural parts for robots

Available materials:

- Wood
- MDF
- ABS



# 3. Enrichment of working environment

## 3.3D printer

- Used to rapid-prototype parts of robots
- Available material

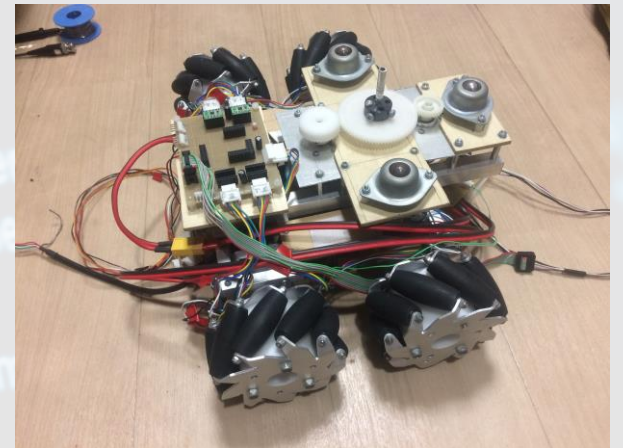
ABS(Acylonitrile Butadiene Styrene)

PLA(Polylactic Acid)



## 4. Mechanum wheel

move left and right without changing robot's stability



Thank you for listening!