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- Install POB-Tools and Compiler
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Install Software

- Download: “POB-Tools” and “GNUARM Compiler”
- Download the latest version at: <http://www.pob-tech.com/en/downloads/>

Softwares		
Download name	Update date	
Risbee	04/03/2013	View details →
POB-Tools	04/03/2013	View details →
Wifi updater	04/03/2013	View details →
GNUARM Compiler	04/03/2013	View details →
POB-EYE 1 Driver	04/03/2013	View details →
Orbee	04/03/2013	View details →
POB-Bot Driver	04/03/2013	View details →

Install Software

- Install both “POB-Tools” and “GNUARM Compiler” to your computer.
 - Run “pobtools-4.2.6-setup.exe” and “gcc_yagarto_arm.exe” in Windows. (The system used in this manual is Windows, you can also choose software versions for Linux or Mac OS)

Software Setting

- Start “POB-TOOLS”
- Set compiler path for POB-TOOLS:

Setting -> Preferences -> POB-Bot II -> Select YAGARTO GCC compiler location for C language compiler path

For example: suppose the GNUARM Compiler is installed at C:\Program Files, then select the path: C:\Program Files\yagarto\bin

Notice that your robot type are all “POB-Bot II” , so just set compiler path for POB-Bot II .



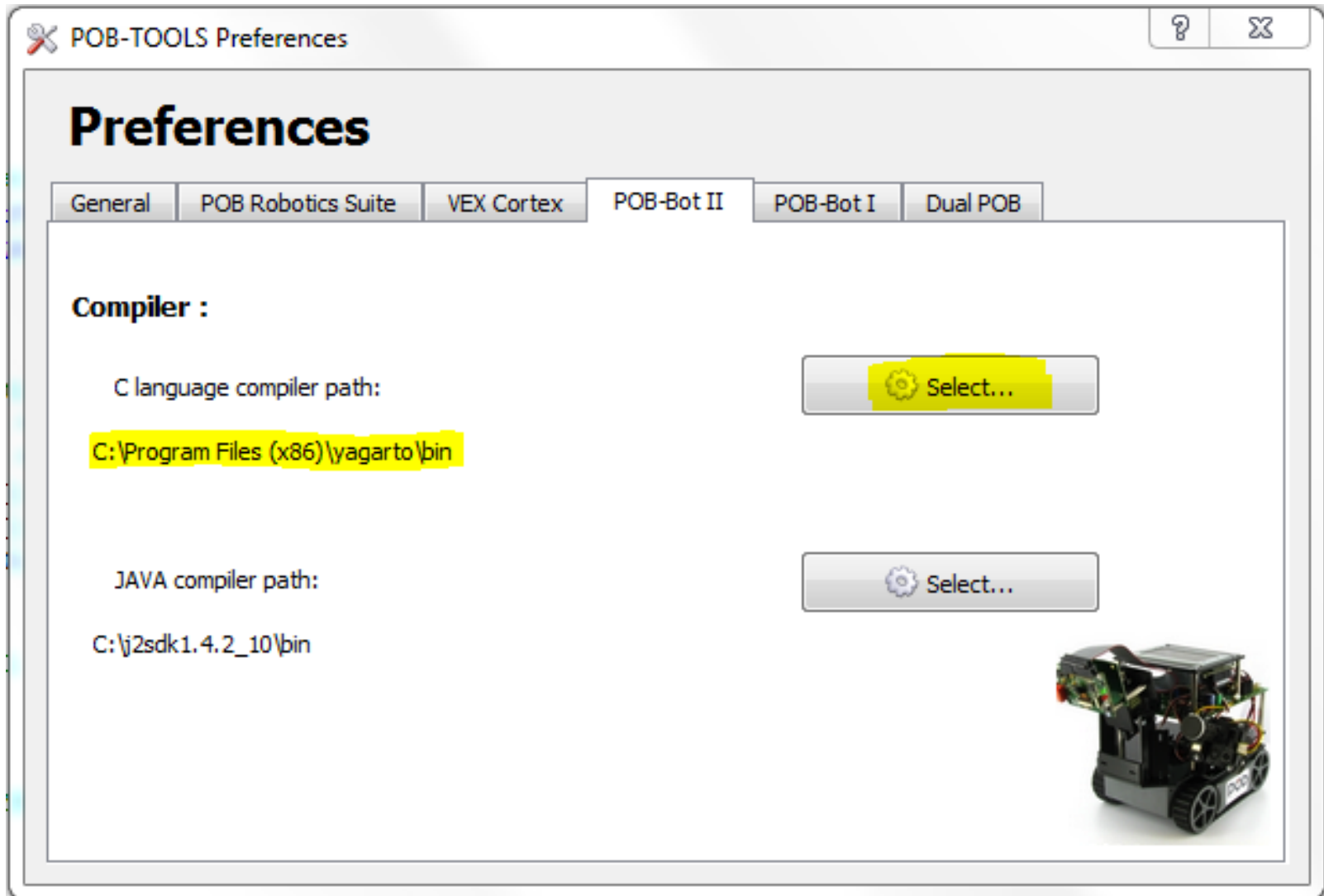
POB-Bot II

The camera is different



POB-Bot I

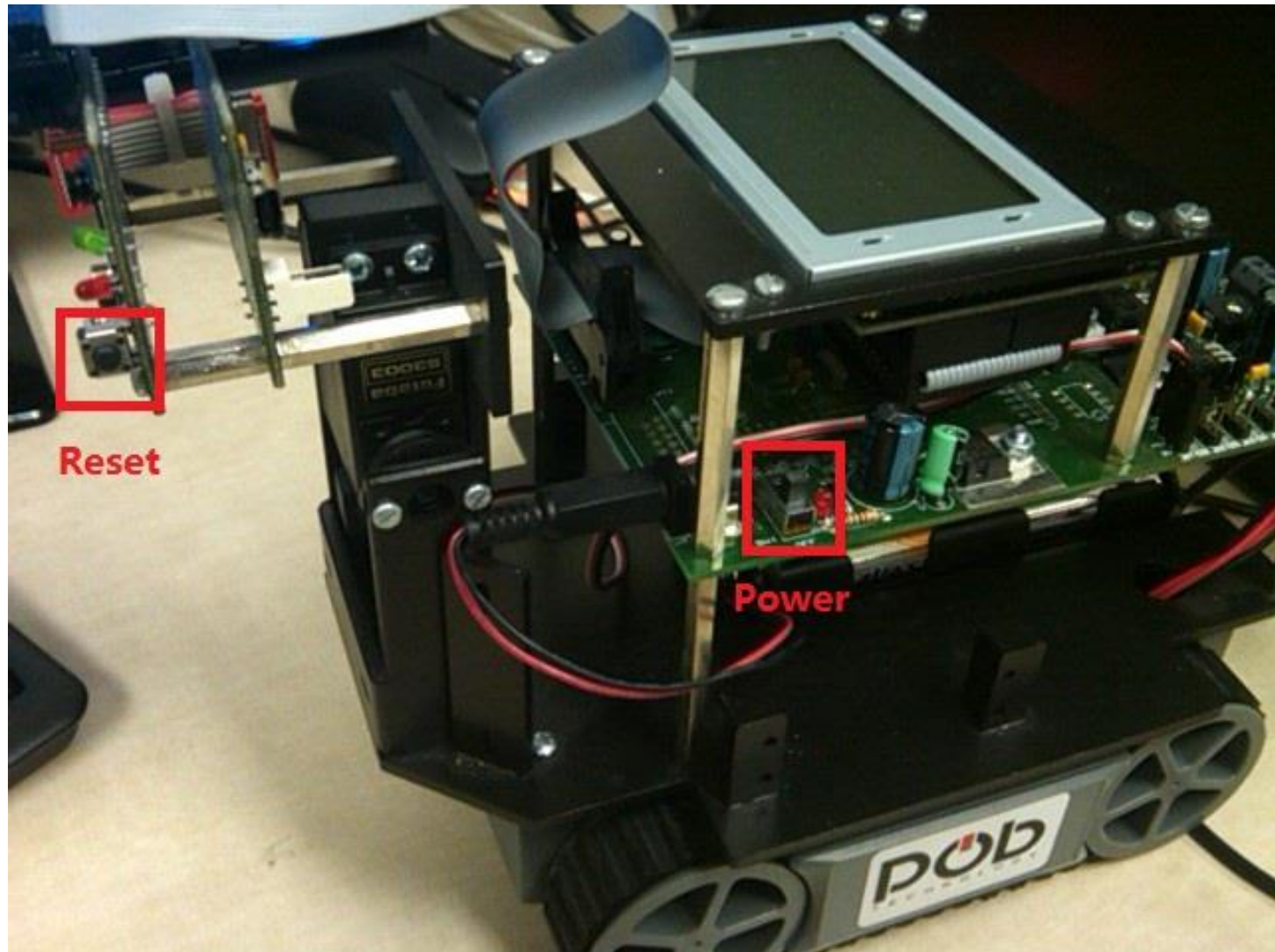
Software Setting



Download Program to Robot

- Start the robot in “**Programming Mode**”
 - The robot has two start mode: Execution mode and Programming mode
 - Start robot in execution mode: click on the power button
 - Start robot in programming mode: keep pressing the reset button, then click on the power button.
- If you want to download the program to your robot, make sure that you **start it in the programming mode.**

Download Program to Robot



Download Program to Robot

- STEP 1:
Start POB-TOOLS and open your project.
Have a check whether your code can be successfully compiled.
- STEP 2:
Connect the robot and computer with USB line.
And **start the robot in the programming mode.**

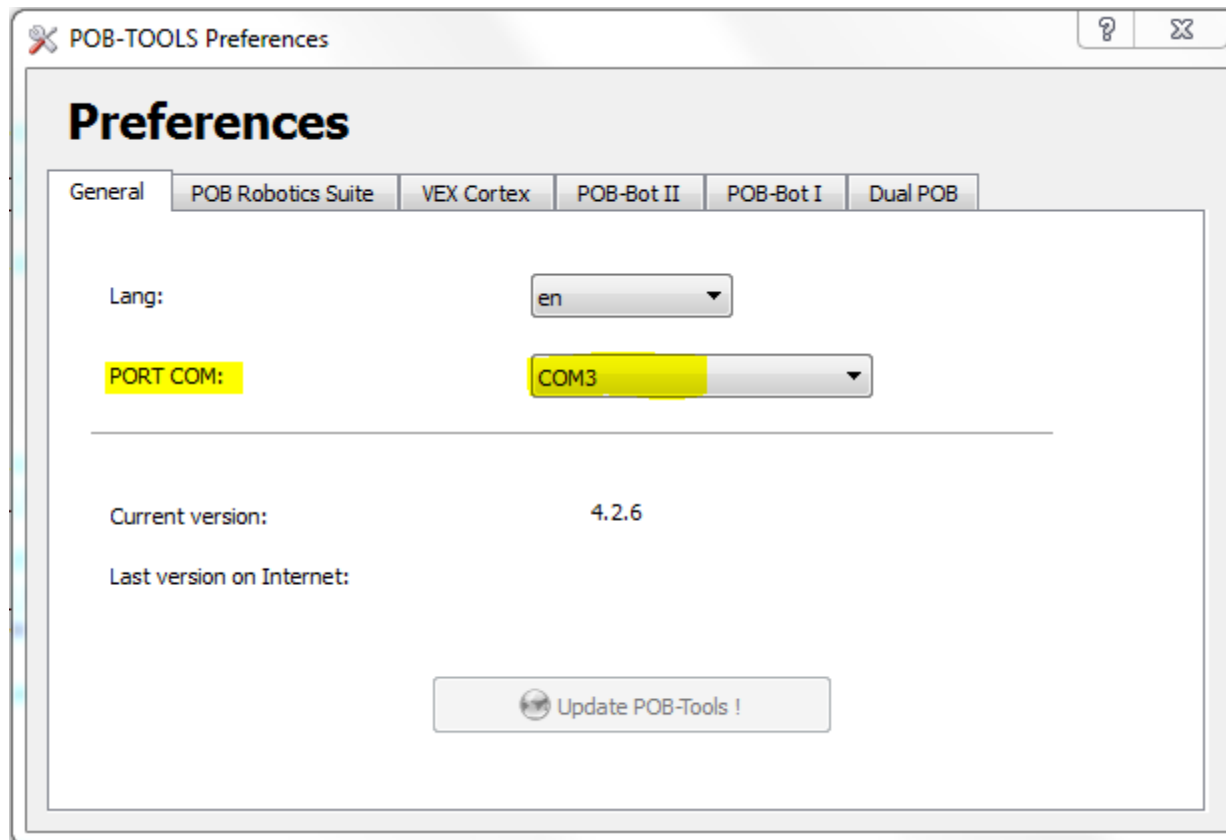


Download Program to Robot

- STEP 3

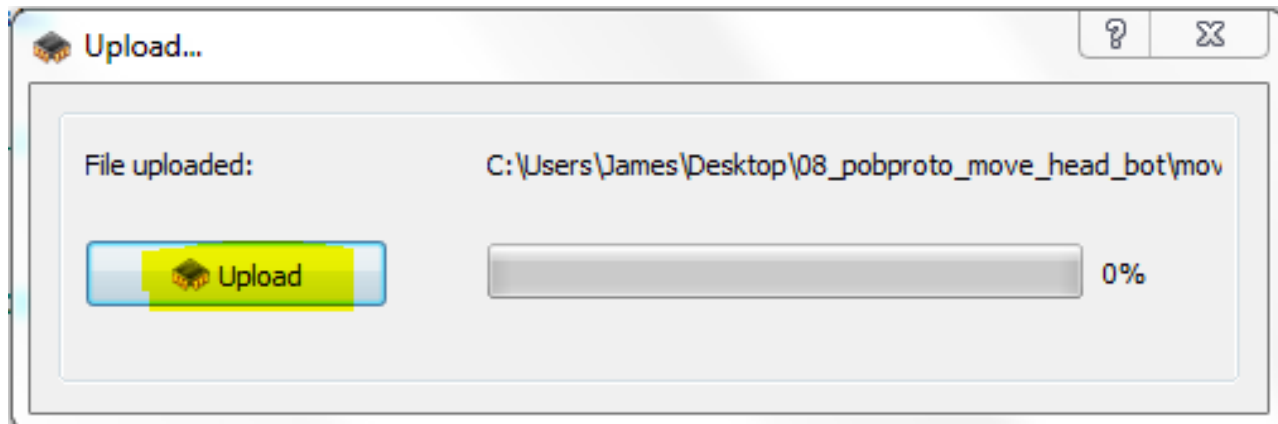
Make sure you have correctly set the PORT COM:

- Setting -> Preferences -> General -> choose correct one for PORT COM (based on your connection)



Download Program to Robot

- STEP 4
Click Upload button in POB-TOOLS
- Build -> Upload -> Upload



Download Program to Robot

- STEP 5

Done!

Click reset button on the robot, and start it in execution mode (usually, it will be done by the robot itself after successful download).

Enjoy your design!

Example code

- You can get examples at
C:\Program File\POB-Technology\POBTOOLS4\sdk\pobeye2\examples
- Develop your program based on these sample codes.
- The useful sample code:
 - 04 form_recognition_and_print**
 - How to recognition shapes and how to print output on LCD
 - 09 pobproto_move_bot**
 - How to move robot
 - 08 pobproto_move_head_bot**
 - How to move robot and its head (you can modify the view for camera by moving head)
- The above three examples are helpful to implement your design.

A Sample Design

- Input: Camera
- Output: BotMove

The robot should be able to choose actions (move forward/backward, turn right/left, stop...) based on what it reads from camera.

Simple signs (circle, triangle, cross...) can be used as traffic signs, for example:

cross: train track

circle: stop sign

triangle: can safely pass

I will print some basic shape signs and locate them in the lab 3.217. But I suggest you to print or design your own sign which will be more appropriate for your own program. Actually, it's not so easy to improve the performance of recognition.

A Sample Design

- You can also use more input and output sensors, like LCD or HeadMove... All of that are based on your design.
- **Feel free to modify your design.**
- If you have problems with software installation or program download, feel free to contact me.
- You can also download a pdf version of this manual at:
www.utdallas.edu/~jinwei.yuan/cs4397

Good luck!