Autonomous Mobile Manipulator

09-Jan-2018

https://github.com/carebare47/PROJ515/

Project manager	Tom, Dan
Project dates	31-Jan-2018 - 15-Apr-2018
Completion	0%
Tasks	63
Resources	5

Tasks

Name	Begin date	End date	Resources
Gripper	01/02/18	22/02/18	
Find suitable servos	01/02/18	01/02/18	Tom, Dan
Mechanics	07/02/18	12/02/18	
CAD	07/02/18	09/02/18	
Integrate LEDs	07/02/18	07/02/18	Dan
Integrate camera	07/02/18	07/02/18	Dan
Integrate PCB	07/02/18	07/02/18	Dan
Finish gripper CAD	08/02/18	09/02/18	Dan
CAM	10/02/18	12/02/18	
3D print gripper	10/02/18	12/02/18	3d print
Electronics	02/02/18	21/02/18	
Schematics	02/02/18	02/02/18	
LED driver and servo breakout	02/02/18	02/02/18	Tom
PCB layout	03/02/18	03/02/18	Tom
Get PCB made	05/02/18	20/02/18	PCB production by the university
Gripper PCB assembly	21/02/18	21/02/18	Tom
Assemble gripper	14/02/18	14/02/18	Dan
Gripper control software	10/02/18	10/02/18	Dan
Gripper testing	22/02/18	22/02/18	Dan
Gripper Finished	23/02/18	23/02/18	
Vision	31/01/18	05/03/18	
Get data on QR codes distance vs resolution vs size	31/01/18	31/01/18	Tom, Dan
Hand cam	21/02/18	05/03/18	
Choose/install fiducial localisation software (hand)	21/02/18	21/02/18	Tom, Dan
Software development	23/02/18	05/03/18	
Hand cam node	23/02/18	03/03/18	

Tasks

Name	Begin date	End date	Resources
Visual servoing and fiducial tracker	23/02/18	03/03/18	Dan
Gripper close trigger when gripper is in the right place	02/03/18	03/03/18	Dan
Test visual servoing and gripper close (not on arm)	05/03/18	05/03/18	Dan
Head cam	24/02/18	03/03/18	
Choose/install fiducial localisation software (head)	24/02/18	24/02/18	Tom, Dan
Develop fiducial system to detect object and point hand cam at it	28/02/18	03/03/18	Tom
Write node to recieve fiducial detected signal and pass location to waypoint node (Object mapper)	27/02/18	27/02/18	Tom
Test head cam identification and saving with waypoint node	28/02/18	01/03/18	Tom
Headcam can identify, locate and save the location of objects	02/03/18	02/03/18	
Localisation/Navigation	06/02/18	01/03/18	
Make sure everything still works	06/02/18	06/02/18	Tom
Fix encoder	07/02/18	09/02/18	Tom
Evaluate current performance	10/02/18	13/02/18	Tom
Go to object identified by object mapper (potentially with variable goal accuracy)	02/03/18	02/03/18	
Arm	01/02/18	12/03/18	
Mounting arm on base	01/02/18	05/02/18	
Decide on mounting method for arm	01/02/18	01/02/18	Tom, Dan
Design arm mount	02/02/18	02/02/18	Dan
Build arm mount	03/02/18	03/02/18	Dan
Mount arm	05/02/18	05/02/18	Dan
Mounting gripper on arm	14/02/18	24/02/18	
Design gripper to arm mount	14/02/18	21/02/18	Dan
Print gripper mount	22/02/18	23/02/18	3d print
Mount gripper on arm	24/02/18	24/02/18	Dan
Control	26/02/18	12/03/18	
Learn how to control arm	26/02/18	28/02/18	Tom

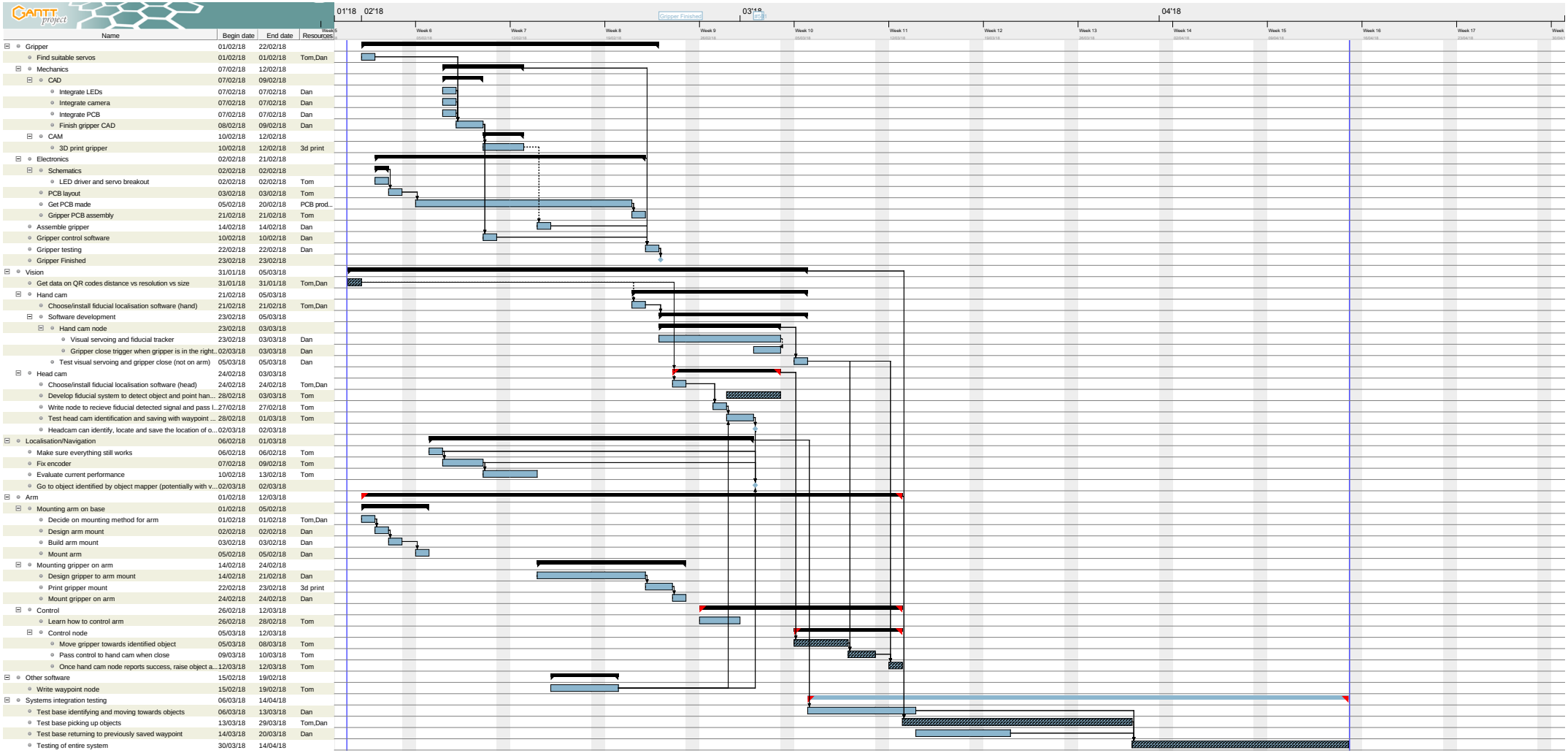
Tasks

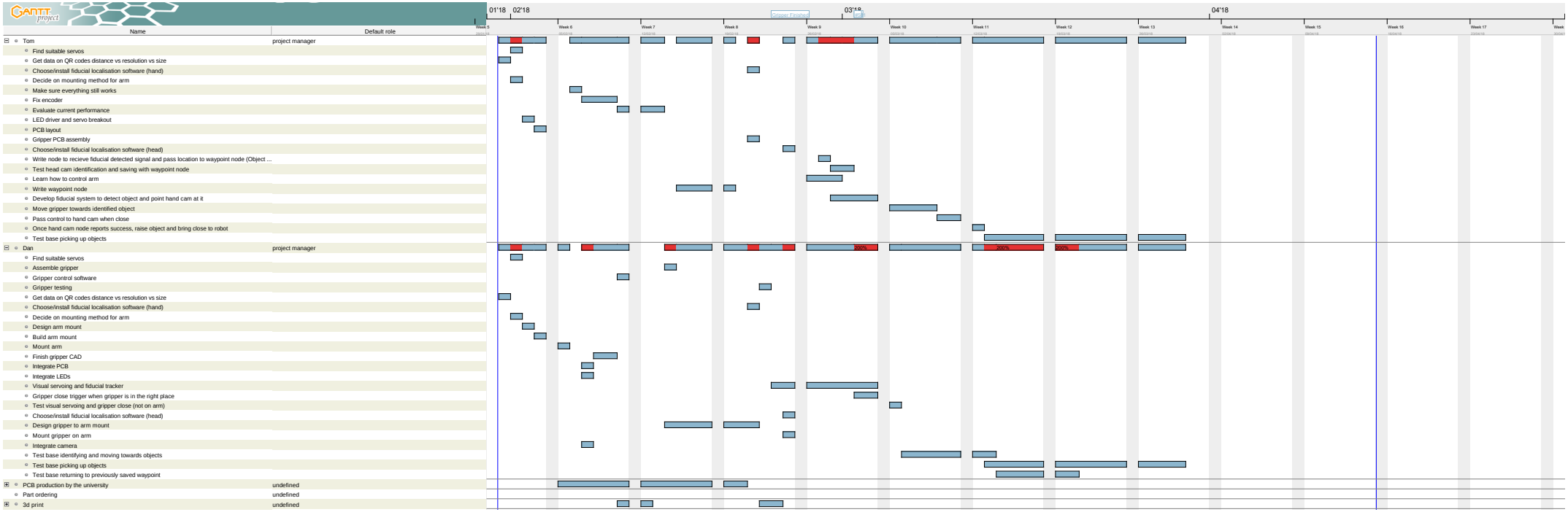
Name	Begin date	End date	Resources
Control node	05/03/18	12/03/18	
Move gripper towards identified object	05/03/18	08/03/18	Tom
Pass control to hand cam when close	09/03/18	10/03/18	Tom
Once hand cam node reports success, raise object and bring close to robot	12/03/18	12/03/18	Tom
Other software	15/02/18	19/02/18	
Write waypoint node	15/02/18	19/02/18	Tom
Systems integration testing	06/03/18	14/04/18	
Test base identifying and moving towards objects	06/03/18	13/03/18	Dan
Test base picking up objects	13/03/18	29/03/18	Tom, Dan
Test base returning to previously saved waypoint	14/03/18	20/03/18	Dan
Testing of entire system	30/03/18	14/04/18	

Resources

Name	Default role
Tom	project manager
Dan	project manager
PCB production by the university	undefined
Part ordering	undefined
3d print	undefined

Gantt Chart



Name	Begin date	End date	Resources
Gripper	01/02/18	22/02/18	
Find suitable servos	01/02/18	01/02/18	Tom,Dan
Mechanics	07/02/18	12/02/18	
CAD	07/02/18	09/02/18	
Integrate LEDs	07/02/18	07/02/18	Dan
Integrate camera	07/02/18	07/02/18	Dan
Integrate PCB	07/02/18	07/02/18	Dan
Finish gripper CAD	08/02/18	09/02/18	Dan
CAM	10/02/18	12/02/18	
3D print gripper	10/02/18	12/02/18	3d print
Electronics	02/02/18	21/02/18	
Schematics	02/02/18	02/02/18	
LED driver and servo breakout	02/02/18	02/02/18	Tom
PCB layout	03/02/18	03/02/18	Tom
Get PCB made	05/02/18	20/02/18	PCB prod...
Gripper PCB assembly	21/02/18	21/02/18	Tom
Assemble gripper	14/02/18	14/02/18	Dan
Gripper control software	10/02/18	10/02/18	Dan
Gripper testing	22/02/18	22/02/18	Dan
Gripper Finished	23/02/18	23/02/18	
Vision	31/01/18	05/03/18	
Get data on QR codes distance vs resolution vs size	31/01/18	31/01/18	Tom,Dan
Hand cam	21/02/18	05/03/18	
Choose/install fiducial localisation software (hand)	21/02/18	21/02/18	Tom,Dan
Software development	23/02/18	05/03/18	
Hand cam node	23/02/18	03/03/18	
Visual servoing and fiducial tracker	23/02/18	03/03/18	Dan
Gripper close trigger when gripper is in the right...	02/03/18	03/03/18	Dan
Test visual servoing and gripper close (not on arm)	05/03/18	05/03/18	Dan
Head cam	24/02/18	03/03/18	
Choose/install fiducial localisation software (head)	24/02/18	24/02/18	Tom,Dan
Develop fiducial system to detect object and point han...	28/02/18	03/03/18	Tom
Write node to recieve fiducial detected signal and pass l...	27/02/18	27/02/18	Tom
Test head cam identification and saving with waypoint ...	28/02/18	01/03/18	Tom
Headcam can identify, locate and save the location of o...	02/03/18	02/03/18	
Localisation/Navigation	06/02/18	01/03/18	
Make sure everything still works	06/02/18	06/02/18	Tom
Fix encoder	07/02/18	09/02/18	Tom
Evaluate current performance	10/02/18	13/02/18	Tom
Go to object identified by object mapper (potentially with v...	02/03/18	02/03/18	
Arm	01/02/18	12/03/18	
Mounting arm on base	01/02/18	05/02/18	
Decide on mounting method for arm	01/02/18	01/02/18	Tom,Dan
Design arm mount	02/02/18	02/02/18	Dan
Build arm mount	03/02/18	03/02/18	Dan
Mount arm	05/02/18	05/02/18	Dan
Mounting gripper on arm	14/02/18	24/02/18	
Design gripper to arm mount	14/02/18	21/02/18	Dan
Print gripper mount	22/02/18	23/02/18	3d print
Mount gripper on arm	24/02/18	24/02/18	Dan
Control	26/02/18	12/03/18	
Learn how to control arm	26/02/18	28/02/18	Tom
Control node	05/03/18	12/03/18	
Move gripper towards identified object	05/03/18	08/03/18	Tom
Pass control to hand cam when close	09/03/18	10/03/18	Tom
Once hand cam node reports success, raise object a...	12/03/18	12/03/18	Tom
Other software	15/02/18	19/02/18	
Write waypoint node	15/02/18	19/02/18	Tom
Systems integration testing	06/03/18	14/04/18	
Test base identifying and moving towards objects	06/03/18	13/03/18	Dan
Test base picking up objects	13/03/18	29/03/18	Tom,Dan
Test base returning to previously saved waypoint	14/03/18	20/03/18	Dan
Testing of entire system	30/03/18	14/04/18	

Resources Chart