Solution for connecting Jetson-Nano to Pixhawk: (*thanks to all who pitched in and a special thanks to ppoirier*)

Result : Propeller rotated as programmed in simple_goto.py

Main issue: Firmware on Pixhawk required upgrade, this was suggested by "**ppoirier**" on ardupilot discussion forum (https://discuss.ardupilot.org/t/nvidia-jetson-nano-for-pixhawk/46052/30)

Suggestion: Upgraded from **Autopilot Firmware version: APM:Copter-3.4.6 to Autopilot Firmware version: APM:Copter-4.0.1.**

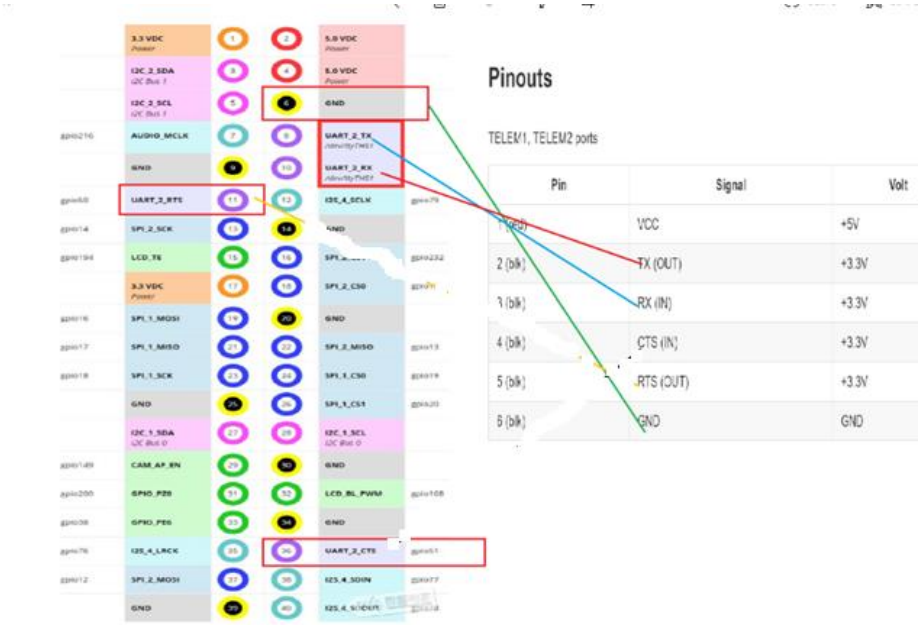
mtbsteve mentioned https://github.com/mtbsteve/redtail is up and running along with a full implementation of the original Redtail project on Arducopter plus a bunch of enhancements. https://discuss.ardupilot.org/t/nvidia-jetson-nano-for-pixhawk/46052/32

Jetson-nano-j41 and Pixhawk Telem2 connection details:

Jetson -nano j-41 power pin (#2 or 4) is not connected to Pixhawk (pin 1) .

Following are my connection details :

1. GND jetson-nano (pin #4) is connected to GND of Pixhawk (6th pin)
2. TX of jetson nano (8th pin) is connected to RX of Pixhawk(3rd pin)
3. RX of jestson nano (10th pin) is connected to TX of Pixhawk (2nd pin)



How to upgrade **Autopilot Firmware :**

1. **First use MissionPlanner to update firmware (**https://ardupilot.org/planner/docs/common-loading-firmware-onto-pixhawk.html**)**
2. **Next recalibrate Accel Calibration and Compass, for this I used QGroundControl**

   Following are the steps to configure QGroundControl
   https://docs.qgroundcontrol.com/en/getting_started/download_and_install.html

   sudo usermod -a -G dialout $USER
   sudo apt-get remove modemmanager -y
   sudo apt install gstreamer1.0-plugins-bad gstreamer1.0-libav -y
   Download https://s3-us-west-2.amazonaws.com/qgroundcontrol/latest/QGroundControl.AppImage

   chmod +x ./QGroundControl.AppImage
   ./QGroundControl.AppImage (or double click)

   perform calibration mainly the
   1. Accel Calibration
   2. Compass calibration (preferablly sitting outside)

Two tests performed and both achieved satisfactory results:

Test1: vehicle_state.py (https://github.com/dronekit/dronekit-python/tree/master/examples/vehicle_state)

Customization on vehicle_state.py , I have hardcoded the parameters for connection_string
#vehicle = connect(connection_string, wait_ready=True)
vehicle = connect('/dev/ttyTHS1', wait_ready=True, baud=57600)

output of Test1:
Connecting to vehicle on: <dronekit.Vehicle object at 0x7f835e9240>
CRITICAL:autopilot:PreArm: GPS glitching

Get all vehicle attribute values:
Autopilot Firmware version: APM:Copter-4.0.1
Major version number: 4
Minor version number: 0
Patch version number: 1
Release type: rc

Release version: 0
Stable release?: True
Autopilot capabilities
Supports MISSION_FLOAT message type: True
Supports PARAM_FLOAT message type: True
Supports MISSION_INT message type: True
Supports COMMAND_INT message type: True
Supports PARAM_UNION message type: False
Supports ftp for file transfers: True
Supports commanding attitude offboard: True
Supports commanding position and velocity targets in local NED frame: True
Supports set position + velocity targets in global scaled integers: True
Supports terrain protocol / data handling: True
Supports direct actuator control: False
Supports the flight termination command: True
Supports mission_float message type: True
Supports onboard compass calibration: True
Global Location: LocationGlobal:lat=39.0454788,lon=-77.5109107,alt=89.06
Global Location (relative altitude): LocationGlobalRelative:lat=39.0454788,lon=-77.5109107,alt=-0.927
Local Location: LocationLocal:north=-2.4225430488586426,east=0.04539155960083008,down=0.9788298010826111
Attitude: Attitude:pitch=-0.02892705425620079,yaw=-2.761756181716919,roll=0.00626177154481411
Velocity: [-0.44, 0.23, 0.01]
GPS: GPSInfo:fix=3,num_sat=11
Gimbal status: Gimbal: pitch=None, roll=None, yaw=None
Battery: Battery:voltage=0.0,current=None,level=None
EKF OK?: True
Last Heartbeat: 0.7351576400005797
Rangefinder: Rangefinder: distance=None, voltage=None
Rangefinder distance: None
Rangefinder voltage: None
Heading: 201
Is Armable?: True
System status: STANDBY
Groundspeed: 0.48128166794776917
Airspeed: 0.4520000219345093
Mode: GUIDED
Armed: False

Home location: LocationGlobal:lat=39.04550552368164,lon=-77.51091003417969,alt=89.98999786376953

Set new home location
New Home Location (from attribute - altitude should be 222): LocationGlobal:lat=39.0454776,lon=-77.5109096,alt=222.0
New Home Location (from vehicle - altitude should be 222): LocationGlobal:lat=39.04547882080078,lon=-77.51091003417969,alt=222.0

Set Vehicle.mode = GUIDED (currently: GUIDED)

Add `attitude` attribute callback/observer on `vehicle`
Wait 2s so callback invoked before observer removed
CALLBACK: Attitude changed to Attitude:pitch=-0.028342360630631447,yaw=-2.761568546295166,roll=0.006377635523676872

CALLBACK: Attitude changed to Attitude:pitch=-0.028491877019405365,yaw=-2.761573076248169,roll=0.006517069414258003
CALLBACK: Attitude changed to Attitude:pitch=-0.02878626063466072,yaw=-2.761592149734497,roll=0.006305241957306862
CALLBACK: Attitude changed to Attitude:pitch=-0.029111385345458984,yaw=-2.7616162300109863,roll=0.005692942067980766
CALLBACK: Attitude changed to Attitude:pitch=-0.029359156265854836,yaw=-2.761615753173828,roll=0.005402371287345886
CALLBACK: Attitude changed to Attitude:pitch=-0.029208604246377945,yaw=-2.7615883350372314,roll=0.0054700858891010284
CALLBACK: Attitude changed to Attitude:pitch=-0.02889634668827057,yaw=-2.7616171836853027,roll=0.006072578951716423
CALLBACK: Attitude changed to Attitude:pitch=-0.028583664447069168,yaw=-2.7616231441497803,roll=0.0069753676652908325
Remove Vehicle.attitude observer

Add `mode` attribute callback/observer using decorator
Set mode=STABILIZE (currently: GUIDED) and wait for callback
Wait 2s so callback invoked before moving to next example
CALLBACK: Mode changed to VehicleMode:STABILIZE

Attempt to remove observer added with `on_attribute` decorator (should fail)
Exception: Cannot remove observer added using decorator

Add attribute callback detecting ANY attribute change
Wait 1s so callback invoked before observer removed
CALLBACK: (heading): 201
CALLBACK: (airspeed): 0.11700000613927841
CALLBACK: (groundspeed): 0.25296738743782043
CALLBACK: (last_heartbeat): 0.8704058809998969
CALLBACK: (last_heartbeat): 0.8761682439999277
CALLBACK: (last_heartbeat): 0.8848013730003004
CALLBACK: (last_heartbeat): 0.8966339159997005
CALLBACK: (last_heartbeat): 0.8991714470002989
CALLBACK: (gps_0): GPSInfo:fix=3,num_sat=11
CALLBACK: (last_heartbeat): 0.9155551410003682
CALLBACK: (last_heartbeat): 0.9365757670002495
CALLBACK: (last_heartbeat): 0.9408005590003086
CALLBACK: (last_heartbeat): 0.9495019690002664
CALLBACK: (last_heartbeat): 0.9564203890004137
CALLBACK: (last_heartbeat): 0.959036828000535
CALLBACK: (location.local_frame): LocationLocal:north=-0.8009014129638672,east=0.7146644592285156,down=132.6950225830078
CALLBACK: (location): <dronekit.Locations object at 0x7f822a2b38>
CALLBACK: (last_heartbeat): 0.9698005549998925
CALLBACK: (last_heartbeat): 0.9982773680003447
CALLBACK: (last_heartbeat): 9.432400020159548e-05
CALLBACK: (last_heartbeat): 0.05038922099993215
CALLBACK: (attitude): Attitude:pitch=-0.024946313351392746,yaw=-2.7615976333618164,roll=0.010313747450709343
CALLBACK: (location.global_relative_frame): LocationGlobalRelative:lat=39.0454716,lon=-77.5109039,alt=-132.675
CALLBACK: (location.global_frame): LocationGlobal:lat=39.0454716,lon=-77.5109039,alt=89.32

CALLBACK: (location): <dronekit.Locations object at 0x7f822a2b38>
CALLBACK: (last_heartbeat): 0.9698005549998925
CALLBACK: (last_heartbeat): 0.9982773680003447
CALLBACK: (last_heartbeat): 9.432400020159548e-05
CALLBACK: (last_heartbeat): 0.05038922099993215
CALLBACK: (attitude): Attitude:pitch=-0.024946313351392746,yaw=-2.7615976333618164,roll=0.010313747450709343
CALLBACK: (location.global_relative_frame): LocationGlobalRelative:lat=39.0454716,lon=-77.5109039,alt=-132.675
CALLBACK: (location.global_frame): LocationGlobal:lat=39.0454716,lon=-77.5109039,alt=89.32
CALLBACK: (location): <dronekit.Locations object at 0x7f822a2b38>
CALLBACK: (velocity): [-0.16, 0.15, -0.01]
CALLBACK: (last_heartbeat): 0.08280577000004996
CALLBACK: (battery): Battery:voltage=0.0,current=None,level=None
CALLBACK: (last_heartbeat): 0.09489966999990429
CALLBACK: (last_heartbeat): 0.10634799000035855
CALLBACK: (heading): 201
CALLBACK: (airspeed): 0.0990000069141388
CALLBACK: (groundspeed): 0.22426146268844604
CALLBACK: (last_heartbeat): 0.11478033399998822
CALLBACK: (last_heartbeat): 0.12629631100026018
CALLBACK: (last_heartbeat): 0.1342360449998523
CALLBACK: (last_heartbeat): 0.1411041520004801
CALLBACK: (last_heartbeat): 0.14937795200057735
CALLBACK: (gps_0): GPSInfo:fix=3,num_sat=10
CALLBACK: (last_heartbeat): 0.1591080210000655
CALLBACK: (last_heartbeat): 0.1746934760003569
CALLBACK: (last_heartbeat): 0.19531545100016956
CALLBACK: (location.local_frame): LocationLocal:north=-0.7577090263366699,east=0.6934318542480469,down=132.67344665527344
CALLBACK: (location): <dronekit.Locations object at 0x7f822a2b38>
CALLBACK: (last_heartbeat): 0.21268582300035632
CALLBACK: (last_heartbeat): 0.26297993900061556
CALLBACK: (last_heartbeat): 0.3134828590000325
CALLBACK: (last_heartbeat): 0.3182143760004692
CALLBACK: (attitude): Attitude:pitch=-0.024778300896286964,yaw=-2.7616121768951416,roll=0.010530060157179832
CALLBACK: (last_heartbeat): 0.3248859690002064
CALLBACK: (location.global_relative_frame): LocationGlobalRelative:lat=39.045472,lon=-77.5109041,alt=-132.656
CALLBACK: (location.global_frame): LocationGlobal:lat=39.045472,lon=-77.5109041,alt=89.34
CALLBACK: (location): <dronekit.Locations object at 0x7f822a2b38>
CALLBACK: (velocity): [-0.13, 0.14, -0.01]
CALLBACK: (last_heartbeat): 0.33667913699991914
CALLBACK: (battery): Battery:voltage=0.0,current=None,level=None
CALLBACK: (last_heartbeat): 0.3423529570000028
CALLBACK: (last_heartbeat): 0.34972252799980197
CALLBACK: (last_heartbeat): 0.3600759900000412
CALLBACK: (heading): 201
CALLBACK: (airspeed): 0.29600000381469727
CALLBACK: (groundspeed): 0.1988341063261032
CALLBACK: (last_heartbeat): 0.37838470800033974
CALLBACK: (last_heartbeat): 0.39673233200028335
CALLBACK: (gps_0): GPSInfo:fix=3,num_sat=10

CALLBACK: (last_heartbeat): 0.4174636309999187

CALLBACK: (last_heartbeat): 0.43582427599994844
CALLBACK: (last_heartbeat): 0.44652894099999685
CALLBACK: (last_heartbeat): 0.45290464499976224
CALLBACK: (location.local_frame): LocationLocal:north=-0.709986686706543,east=0.6740903854370117,down=132.65574645996094
CALLBACK: (location): <dronekit.Locations object at 0x7f822a2b38>
CALLBACK: (last_heartbeat): 0.4597364490000473
CALLBACK: (last_heartbeat): 0.465943922000406
CALLBACK: (last_heartbeat): 0.516472727999826
CALLBACK: (last_heartbeat): 0.5668334580004739
CALLBACK: (attitude): Attitude:pitch=-0.024639783427119255,yaw=-2.7615737915039062,roll=0.010666463524103165
CALLBACK: (last_heartbeat): 0.5793902289997277
CALLBACK: (location.global_relative_frame): LocationGlobalRelative:lat=39.0454725,lon=-77.5109042,alt=-132.64
CALLBACK: (location.global_frame): LocationGlobal:lat=39.0454725,lon=-77.5109042,alt=89.35
CALLBACK: (location): <dronekit.Locations object at 0x7f822a2b38>
CALLBACK: (velocity): [-0.11, 0.13, -0.02]
CALLBACK: (battery): Battery:voltage=0.0,current=None,level=None
CALLBACK: (last_heartbeat): 0.5929619079997792
CALLBACK: (last_heartbeat): 0.5959536119999029
CALLBACK: (last_heartbeat): 0.6048378890000095
CALLBACK: (heading): 201
CALLBACK: (airspeed): 0.27000001072883606
CALLBACK: (groundspeed): 0.17714251577854156
CALLBACK: (last_heartbeat): 0.6261010710004484
CALLBACK: (last_heartbeat): 0.6284703709998212
CALLBACK: (last_heartbeat): 0.634057784000106
CALLBACK: (last_heartbeat): 0.6499026689998573
CALLBACK: (last_heartbeat): 0.6586420479998196
CALLBACK: (gps_0): GPSInfo:fix=3,num_sat=11
CALLBACK: (last_heartbeat): 0.6801525239998227
CALLBACK: (last_heartbeat): 0.6924212710000575
CALLBACK: (last_heartbeat): 0.7065871240001798
CALLBACK: (location.local_frame): LocationLocal:north=-0.6582937240600586,east=0.6640357971191406,down=132.6395263671875
CALLBACK: (location): <dronekit.Locations object at 0x7f822a2b38>
CALLBACK: (last_heartbeat): 0.7168523039999855
CALLBACK: (last_heartbeat): 0.7675500180002928
CALLBACK: (last_heartbeat): 0.8181183550004789
CALLBACK: (attitude): Attitude:pitch=-0.02446504682302475,yaw=-2.7615339756011963,roll=0.010788487270474434
CALLBACK: (location.global_relative_frame): LocationGlobalRelative:lat=39.045473,lon=-77.5109047,alt=-132.628
CALLBACK: (location.global_frame): LocationGlobal:lat=39.045473,lon=-77.5109047,alt=89.37
CALLBACK: (location): <dronekit.Locations object at 0x7f822a2b38>
CALLBACK: (velocity): [-0.08, 0.11, -0.02]
CALLBACK: (battery): Battery:voltage=0.0,current=None,level=None
CALLBACK: (last_heartbeat): 0.8406518120000328
CALLBACK: (last_heartbeat): 0.8492957739999838
CALLBACK: (last_heartbeat): 0.8597079870005473

Test2 simple_goto.py (https://github.com/dronekit/dronekit-python/tree/master/examples/simple_goto)
, I have hardcoded the parameters for connection_string
#vehicle = connect(connection_string, wait_ready=True)
vehicle = connect('/dev/ttyTHS1', wait_ready=True, baud=57600)
In this test props rotated and the everything worked as planned

Output of Test2:

```
starting copter simulator (SITL)
SITL already Downloaded and Extracted.
Ready to boot.
warning: TCG doesn't support requested feature: CPUID.01H:ECX.vmx [bit 5]
/lib64/ld-linux-x86-64.so.2: No such file or directory
Connecting to vehicle on: tcp:127.0.0.1:5760
Basic pre-arm checks
Arming motors
 Waiting for arming...
Taking off!
 Altitude:  -130.824
 Altitude:  -130.853
 Altitude:  -130.867
 Altitude:  -130.873
 Altitude:  -130.835
 Altitude:  -130.811
 Altitude:  -130.789
 Altitude:  -130.72
 Altitude:  -130.68
```