Transform (Calls: 310, Time: 110.736 sec)

Generated 29-Jun-2016 19:10:24 using performance time.
script in file C:\ZerbrafishProject\Transform.m
Copy to new window for comparing multiple runs

Refresh

☑ Show parent functions ☑ Show busy lines ☑ Show child functions
☑ Show Code Analyzer results ☑ Show file coverage ☑ Show function listing

Parents (calling functions)

Function Name	Function Type	Calls
BackGroundTailor	script	1
ProjectionGUI>GenerateMovie_Callback	subfunction	309

Lines where the most time was spent

Line Number	Code	Calls	Total Time	% Time
92	`EffectIndex=c_Intersect(c_Inte...`	310	20.865 s	18.8%
94	`RefIndex(EffectIndex)=[];%excl...`	310	8.304 s	7.5%
34	`handles.bodyCoordinate(:,:,2)=...`	310	7.707 s	7.0%
33	`handles.bodyCoordinate(:,:,1)=...`	310	7.614 s	6.9%
22	`[handles.cylindricalCoordinate...`	310	6.744 s	6.1%
All other lines			59.502 s	53.7%
Totals			110.736 s	100%

Children (called functions)

Function Name	Function Type	Calls	Total Time	% Time	Time Plot
c_Intersect	MEX-file	620	20.054 s	18.1%	
meshgrid	function	310	2.113 s	1.9%	
cross	function	310	0.007 s	0.0%	
Self time (built-ins, overhead, etc.)			88.563 s	80.0%	

Time Plot





Totals			110.736 s	100%	

Code Analyzer results
No Code Analyzer messages.

Coverage results
Show coverage for parent directory

Total lines in function	100
Non-code lines (comments, blank lines)	51
Code lines (lines that can run)	49
Code lines that did run	49
Code lines that did not run	0
Coverage (did run/can run)	100.00 %

Function listing
Color highlight code according to time

time	Calls	line	
< 0.01	310	2	y0=0;%y0 is the horizontal offset of the proj
< 0.01	310	3	z0=handles.z0;%zo is the offset of the height
< 0.01	310	4	gamma=handles.gamma;%gamma is the projector i
< 0.01	310	5	gamma=gamma*pi/180;
< 0.01	310	6	d0=[cos(gamma),0,sin(gamma)];
< 0.01	310	7	ex=[0,1,0];
0.01	310	8	ey=cross(d0,ex);
< 0.01	310	9	mindegree=0;
		10	% tstart=tic();
< 0.01	310	11	[Height,Width,N]=size(handles.effectIm);
0.82	310	12	handles.cylindricalCoordinate=zeros(Height,Wi
0.82	310	13	handles.projectCoordinate=zeros(Height,Width,
1.19	310	14	handles.bodyCoordinate=zeros(Height,Width,3);
		15	%%%GPU Accerelate %%% Need Nvidia GPU install
		16	% % handles.bodyCoordinate=gpuArray(single(ha
		17	% % handles.cylindricalCoordinate=gpuArray(si
		18	% % handles.projectCoordinate=gpuArray(single
		19	%%%%
		20	%Generate related mesh coordinate
		21	
6.74	310	22	[handles.cylindricalCoordinate(:,:,1),handles
4.69	310	23	handles.cylindricalCoordinate(:,:,1)=handles.
0.03	310	24	[PHeight,PWidth,N2]=size(handles.backGroundIm
< 0.01	310	25	R=handles.dishRadius;
< 0.01	310	26	D=handles.distance;
< 0.01	310	27	Hratio=handles.fieldHeight/handles.physicalHe

```
jector;
: of the projector to dish
incline degree


idth,2);%first is the Theta coordinate, and the next one is relative
 2);%first is the X ,second is the Y
;%first is the X coordinate, and the next one is Y coordinate and th
led.
andles.bodyCoordinate));
ingle(handles.cylindricalCoordinate));
e(handles.projectCoordinate));


s.cylindricalCoordinate(:,:,2)]=  meshgrid(mindegree:handles.stripWi
.cylindricalCoordinate(:,:,1)./360.*2*pi;
n);


eight*D;
```

Z coordinate

ird one is Z coordinate

dthResolution:handles.stripWidth,0:handles.stripHeightResolution:han

```
dles.stripHeight);
```

```
< 0.01      310    28  Wratio=handles.fieldWidth/handles.physicalWid
                   29
                   30
                   31
                   32
  7.61      310    33  handles.bodyCoordinate(:,:,1)=R+D-R.*sin(hand
  7.71      310    34  handles.bodyCoordinate(:,:,2)=y0+R.*cos(handl
  4.64      310    35  handles.bodyCoordinate(:,:,3)=z0-handles.cyli
                   36
                   37
  0.01      310    38  handles.patternIm=handles.backGroundIm;
                   39
                   40  % for i=1:Height
                   41  %     for j=1:Width
                   42  %         d=reshape(handles.bodyCoordinate(i,
                   43  %         handles.projectCoordinate(i,j,1)=(d
                   44  %         handles.projectCoordinate(i,j,2)=((
                   45  %
                   46  % % abs(handles.projectCoordinate(i,j,1))<(ha
                   47  %         if(handles.effectIm(i,j,3)==0)
                   48  %             handles.patternIm(round(handles
                   49  %         end
                   50  %
                   51  %     end
                   52  % end
  2.27      310    53  dx=handles.bodyCoordinate(:,:,1);
  2.34      310    54  dy=handles.bodyCoordinate(:,:,2);
  2.18      310    55  dz=handles.bodyCoordinate(:,:,3);
  1.83      310    56  dH=dx*d0(1)+dy*d0(2)+dz*d0(3);
                   57
                   58  %         d=reshape(handles.bodyCoordinate(i,
                   59  %         handles.projectCoordinate(:,:,1)=(e
                   60  %         handles.projectCoordinate(:,:,2)=(e
  4.54      310    61            handles.projectCoordinate(:,:,1)=(e
  4.53      310    62            handles.projectCoordinate(:,:,2)=(e
                   63
                   64  % effectIm=permute(handles.effectIm,[3,1,2]);
                   65  % for i=1:Height
                   66  %     for j=1:Width
                   67  % % abs(handles.projectCoordinate(i,j,1))<(ha
                   68  % %         if(~isequal(effectIm(:,i,j),255*h
                   69  %             if(handles.effectIm(i,j,:)==0)
                   70  %             handles.patternIm(round(handles
                   71  %
                   72  %
```

```
dth*D;%60 and 104 is the General length of the projector image
```

```
dles.cylindricalCoordinate(:,:,1));
les.cylindricalCoordinate(:,:,1));
indricalCoordinate(:,:,2);
```

```
j,:),1,3);
d-d*d0'*d0)*ex'./(d*d0')*ratio;
(d-d*d0'*d0)*ey')./(d*d0')*ratio;

andles.fieldWidth/2)&&abs(handles.projectCoordinate(i,j,2))<(handles

s.projectCoordinate(i,j,2)+handles.fieldHeight/2),round(handles.proj
```

```
j,:),1,3);
ex(1)*(dx-dH*d0(1))+ex(2)*(dy-dH*d0(2))+ex(3)*(dz-dH*d0(3)))./dH*rat
ey(1)*(dx-dH*d0(1))+ey(2)*(dy-dH*d0(2))+ey(3)*(dz-dH*d0(3)))./dH*rat
ex(1)*(dx-dH*d0(1))+ex(2)*(dy-dH*d0(2))+ex(3)*(dz-dH*d0(3)))./dH*Wra
ey(1)*(dx-dH*d0(1))+ey(2)*(dy-dH*d0(2))+ey(3)*(dz-dH*d0(3)))./dH*Hra

;
```

```
andles.fieldWidth/2)&&abs(handles.projectCoordinate(i,j,2))<(handles
handles.backGroundColor'))

s.projectCoordinate(i,j,2)+handles.fieldHeight/2),round(handles.proj
```

```
.fieldHeight/2)&&

ectCoordinate(i,j,1)+handles.fieldWidth/2),:)=handles.effectIm(i,j,:
```

```
io*2.15;
io*1.5;
tio;
tio;
```

```
.fieldHeight/2)&&

ectCoordinate(i,j,1)+handles.fieldWidth/2),:)=handles.effectIm(i,j,:
```

```
);
```

```
);
```

```
                    73  % %              X=[floor(handles.projectCoorc
                    74  % %              handles.patternIm(X(1),X(2),:
                    75  %
                    76  %
                    77  %              end
                    78  %     end
                    79  % end
  2.24      310     80  ProjectX=reshape(handles.projectCoordinate(:,
  4.44      310     81  ProjectX=-round(ProjectX)+handles.fieldHeight
  2.29      310     82  ProjectY=reshape(handles.projectCoordinate(:,
  4.47      310     83  ProjectY=-round(ProjectY)+handles.fieldWidth/
  1.46      310     84  Coor=ProjectX+(ProjectY-1)*PHeight;
  0.64      310     85  REffectIm=reshape(handles.effectIm(:,:,1),1,H
  0.56      310     86  GEffectIm=reshape(handles.effectIm(:,:,2),1,H
  0.56      310     87  BEffectIm=reshape(handles.effectIm(:,:,3),1,H
  1.42      310     88  RefIndex=1:Height*Width;
  3.39      310     89  RCoor=find(REffectIm==255*handles.backGroundC
  3.45      310     90  GCoor=find(GEffectIm==255*handles.backGroundC
  3.41      310     91  BCoor=find(BEffectIm==255*handles.backGroundC
 20.86      310     92  EffectIndex=c_Intersect(c_Intersect(RCoor,GC
                    93  % EffectIndex=MY_intersect(MY_intersect(RCoor
  8.30      310     94  RefIndex(EffectIndex)=[];%exclude the pixal t
  0.11      310     95  patternIm=reshape(handles.patternIm,1,PHeight
  0.16      310     96  effectIm=reshape(handles.effectIm,1,Height*Wi
< 0.01      310     97  for i=1:3
  0.93      930     98  patternIm(Coor(RefIndex)+(i-1)*PHeight*PWidth
< 0.01      930     99  end
                   100  % toc(tstart);
  0.02      310    101  handles.patternIm=uint8(reshape(patternIm,PHe
```

Other subfunctions in this file are not included in this listing.

```
dinate(i,j,2)+handles.fieldHeight/2),floor(handles.projectCoordinate
:)=handles.patternIm(X(1),X(2),:)+handles.effectIm(i,j,:).*(1-handle



 :,2),1,Height*Width);
t/2;
 :,1),1,Height*Width);
/2;

Height*Width);
Height*Width);
Height*Width);

Color(1));
Color(2));
Color(3));
Coor),BCoor);
r,GCoor),BCoor);
that is background
t*PWidth*3);
idth*3);

n)=effectIm(RefIndex+(i-1)*Height*Width);


eight,PWidth,3));
```

```
(i,j,1)+handles.fieldWidth/2)];
s.effectImFilter(i,j,1))*(1-handles.effectImFilter(i,j,2));
```