

# 2013-2014 学年 ISTC 技术部算法组工作总结

李浩成

2014 年 5 月 20 日

## **Abstract**

# Chapter 1

## 上半学期

上半学期主要进行关键算法、C#、OpenCV、软件工程教学。

### 1.1 131020 组会

1. 开场
2. 通知事情
  - 例会时间
  - 智慧地球
  - 奖励措施
3. 项目介绍
  - 要求：信心，努力
  - 内容
  - 各位介绍思路
  - 分工
    - OpenCV
    - PathFinding
    - UI
4. 注意事项
  - 调试笔记

## 1.2 131026 组会

### 1. 通知

- 加微信主页 xjtuistc
- 冬游

### 2. 安装 Microsoft Visual Studio 2013 Ultimate

### 3. 每个人介绍工作情况

### 4. 介绍寻路算法

- DFS
- Dijkstra
- A\*
- SPFA

## 1.3 131103 组会

### 1. 创建 ISTC Smart Tech Community

### 2. OpenCV 基本数据结构

```
1  typedef struct _IplImage
2  {
3      int    nSize;           /* sizeof(IplImage) */
4      int    ID;             /* version (=0) */
5      int    nChannels;       /* Most of OpenCV functions support 1,2,3 or 4 channels */
6      int    alphaChannel;    /* Ignored by OpenCV */
7      int    depth;          /* Pixel depth in bits: IPL_DEPTH_8U, IPL_DEPTH_8S,
8                               IPL_DEPTH_16S, IPL_DEPTH_32S, IPL_DEPTH_32F
9                               and IPL_DEPTH_64F are supported. */
10     char    colorModel[4];   /* Ignored by OpenCV */
11     char    channelSeq[4];   /* ditto */
12     int     dataOrder;       /* 0 - interleaved color channels, 1 - separate color channels.
13                               cvCreateImage can only create interleaved images */
14     int     origin;          /* 0 - top-left origin,
```

```

15                                     1 – bottom–left origin (Windows bitmaps style).*/
16     int align;                       /* Alignment of image rows (4 or 8).
17                                     OpenCV ignores it and uses widthStep instead.*/
18     int width;                       /* Image width in pixels.*/
19     int height;                     /* Image height in pixels.*/
20     struct _IplROI *roi;             /* Image ROI. If NULL, the whole image is selected. */
21     struct _IplImage *maskROI;      /* Must be NULL. */
22     void *imgData;                  /* " " */
23     struct _IplTileInfo *tileInfo; /* " " */
24     int imageSize;                  /* Image data size in bytes
25                                     (==image->height*image->widthStep
26                                     in case of interleaved data)*/
27     char *imageData;                /* Pointer to aligned image data. */
28     int widthStep;                  /* Size of aligned image row in bytes. */
29     int BorderMode[4];              /* Ignored by OpenCV. */
30     int BorderConst[4];            /* Ditto. */
31     char *imageDataOrigin;          /* Pointer to very origin of image data
32                                     (not necessarily aligned) –
33                                     needed for correct deallocation */
34 }
35 IplImage;
36 typedef struct CvMat
37 {
38     int type;
39     int step;
40     /* for internal use only */
41     int* refcount;
42     int hdr_refcount;
43     union
44     {
45         uchar* ptr;
46         short* s;
47         int* i;
48         float* fl;
49         double* db;

```

```

50     } data;
51     #ifdef __cplusplus
52         union
53         {
54             int rows;
55             int height;
56         };
57         union
58         {
59             int cols;
60             int width;
61         };
62     #else
63         int rows;
64         int cols;
65     #endif
66 }
67 CvMat;

```

### 3. OpenCV 窗口句柄

### 4. 侵蚀算法

### 5. 软件推荐

- Notepad++  
Notepad++ v6.5.1

## 1.3.1 131104 资讯

纪念印度数学家”人脑计算机” Shakuntala Devi 84 岁诞辰。

## 1.3.2 131105 资讯

纪念美国工业设计先锋 Raymond Loewy 120 岁诞辰。

The Official Site of Raymond Loewy

### **1.3.3 131106 资讯**

Winter is coming, SDN as well. Here's one take on what it all means.  
Software-defined networking explained - Network World

### **1.3.4 131108 资讯**

Nokia camera app is named as Nokia Smart Cam.

## **1.4 131109**