CCLabs summer camp plan
August, 26-27th, 2012
Bandai Youth Center, Inawashiro city, Fukushima prefecture

Contents

Scheduling

Schedule
Date and Time : From Sunday, August 26th (department at 9h00 am) to Monday August 27 (arrival at 6h30 pm)
Member : All CCL member, including Prof. Pham and Prof. Thang , 3 new-comming visitor, B3 and B4 student : 11 students.

Time stamp	Activities	Place
First day		
9h00	Gathering	In front of Somei Dorm.
9h15	Start going from Somei Dorm.	
10h00	Arrival to BYC	
10h15	Check in; take futon, pillow to room.	
10h45	Gathering, confirm again the course, see again the map	
11h00	Free time, explore the place	
12h00	Lunch time	
13h10	Take a short rest	
13h45	Prepare for the sport activities	
14h00	Time for sport activities	At outdoor ground
16h15	Take a short rest	
16h30	Prepare for the BBQ party (preparation group)	
17h00	Attend daily "Tsudoi"	Gymnasium
17h40	BBQ party start	BYC camping-ground
20h00	Cleaning up after BBQ party	
20h30	Take a bath	
22h30 ~	Time for sleep	
Second day		
6h00	Wake up and have personal activities	
6h25	Cleaning , vaccuming	
7h00	Morning Tsudoi	Gymnasium
7h10	Breakfast	
8h30	Prepare for the presentation	
8h45	Presentation (List of presentation is attached below)	
12h00	Have lunch	
13h10	Take a rest (or continue for presentation)	
14h00	Check out	

14h15	Leave for Matsuhara lake
15h15	Gathering at Matsuhara lake for Canoeing
15h45	Start 1-hour experience canoeing course
17h00	Having dinner and come back UoA

Work assignment in summer camp

- Photographer: Thang and Hoc
- Shoping at Saturday : Ngoc Anh and Thanh
- Preparation for presentation: Dung, Thanh, Duy (leader).
- Preparation for the BBQ party: Hoc (leader), Cuong, Bach.
- Cleaning in 2nd day morning: Duc, Huong, Ishida.
- Cleaning after BBQ party: everyone attend party.

Prepare Equipment

- For the normal activities
    + Towel (2 or more is better)
    + Clothes (include long sleeve and long pant for avoid insects etc..).
    + Personal healthy insurance (copy version is OK)
- Presentation activities:
    + Projector, computer, electrical socket.
    + Decoration of presentation room
- Outside activities
    + Raincoat, long sleeves and long pants, anti-insect spray, hat, etc…
    + Running shoes
- Sport activities
    + Outdoor sport shoe and others
- BBQ parties (food is served by center)
    + Washing material, sponge, used newspaper.
    + Light, matches, tea-towel.
    + Beer will be prepared by ourselves beacause it's no served in the center.
- Some other neccessity-

About the Bandai Youth Center and BACSS canoe company service and fees

- Meals :
    + Breakfast for reservation people 400 円/1 person.
    + Lunch: 550 円/1 person.
    + BBQ party: depending on ordered food (around 2000 円/1 person).
- Reservation fee: 800 円/1 night/1 person.
- Sheet washing fee: 200 円/1 person.
- Canoeing fee: 2750 円/person.

The cost for each person

1. For the student (all of student attend all 2 days)

    The estimation cost is 7250 円.

    From Lab's fund: (maximum) 5000 円. You will pay by your self about 2250 円.

2. For Prof. Pham and Prof. Truong (who not have to paid reservation fee and 2nd day breakfast)

    The estimation cost is 6250 円.

3. For the Visitor (Who only attend the 2nd day)

    The estimation cost is 3300 円.

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About Bandai Youth center and BACSS location

BYC

Figure 1 : Route to BYC

More detail at http://bandai.niye.go.jp/ (Japanese only)

BACSS Canoe Company

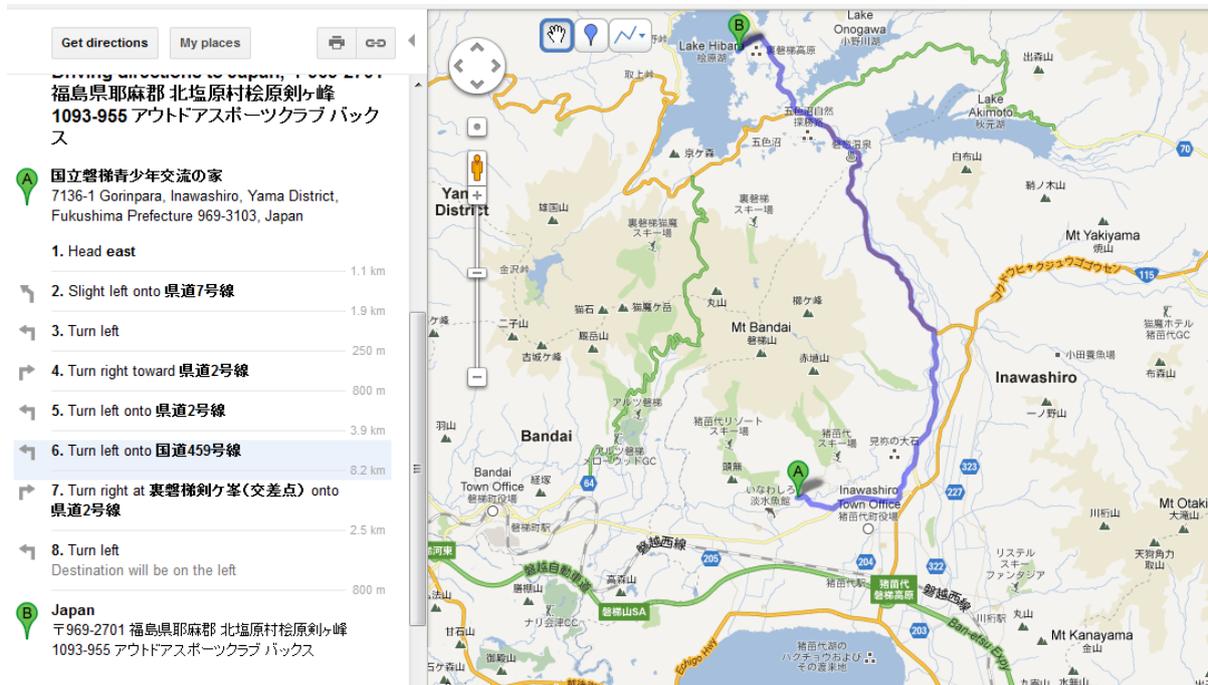More detail about 1-hour experience course http://www.bacss.jp/green/canoe01.html

Figure 2 : Driving direction from BYC to BACSS Canoe Company

Important notes

Please follow the regulation of Bandai Youth Center

- Attend Tsudoi properly.
- You must change your shoe when you enter center so please don't forget to bring indoor shoe or sandal.
- Listening carefully from the instructor of center.
- Try to make everything clean after using any facilities.
- Don't use the hair dryer in your room.
- Go to sleep on time (at 22h30, all light is out).

At BACSS canoeing course

- Prepare to bring outdoor sandals; shoes are not suitable for moving on the canoe.

Time table for presentation and abstraction

Start from 8h45, Monday 27th August.

Time	Presenter	Title of presentattion
8h45	Pham Van Thanh & Tran Ngoc Anh	iPhone application : Tracking your life
8h55		Demonstration of iPhone application
9h10	Nguyen Tat Thang	Introduction of SAE/OCDM System Using Linear Dispersion Channel.
9h25	Vo Tuan Dung & Bui Duy Huong	Efficient features for the Classification work.
9h40	Luong Anh Duy	Effect of APD and Thermal Noises on the Performance of SC-BPSK/FSO Systems over Turbulence Channels
9h55	Nguyen Van Duc	Dynamic adaptive streaming over HTTP from multiple content distribution servers.
10h10	Vu Trong Bach	Performance of Rectangular QAM/FSO Systems using APD Receiver Over Atmospheric Turbulence Channels
10h25	Phan Lac Cuong	Delivery media contents over wireless mesh network
10h40	Nguyen Xuan Hoc	DASH and HTML5 Video Element
10h55	Vu Duc Trong	LED Driver for Broadband Short-Range Optical Fiber Communication Systems
11h10	Ha Duyen Trung	Performance bounds of FSO MIMO/QAM Systems Over Atmospheric Channels
11h25	Mr Tran Dang Ngoc	Performance Improvement of FSO/CDMA Systems over Dispersive Turbulence Channel using Multi-wavelength PPM Signali
11h40	Prof. Nguyen Van Tam	Telecom ParisTech & Cognitive Radio Systems's activities
11h55		Finishing the meeting.

Abstract of presentation

1. **Pham Van Thanh and Tran Ngoc Anh: Iphone appplication - Tracking your daily life activity.**

Our purpose is to implement an iPhone application which is used for recording the trace, time and some other properties for daily life individual activities. Our application is possible to get the location via iPhone GPS and then send the data as XML file to the server. Other people can access the server and read the information from their family member by using server side's application.

2. **Luong Anh Duy: Effect of APD and Thermal Noises on the Performance of SC-BPSK/FSO Systems over Turbulence Channels**

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In this paper, we comprehensively study the performance of direct-detection free-space optical (FSO) communication systems using subcarrier binary phase-shift keying (SC-BPSK) modulation and avalanche photodiode (APD). The system bit-error rate is theoretically derived in case of two atmospheric turbulence channel models: the log-normal and gamma-gamma ones for the weak-to-moderate and moderate-to-strong turbulence conditions, respectively. We quantitatively discuss the optimal values of the average APD's gain, required received optical powers and operating bit-rates considering various turbulence conditions, APD shot noise and thermal noise. It is seen that the effect of temperature on the value of optimal gain is stronger than that of the turbulence. We also find that the impact of turbulence is severe; however using APD receiver with optimal average gain can significantly improve the system performance in both cases of turbulence channels.

3. **Nguyen Tat Thang: Introduction of SAE/OCDM System Using Linear Dispersion Channel.**

Spectral amplitude encoding (SAE) optical code-division multiple-access (OCDMA) systems are being considered as a promising candidate for the next-generation optical access networks. Theoretical analysis of the SAE/OCDMA systems has been extensively studied. As well, experimental implementations have been reported to validate the theoretical results. Implementations are however expensive and hence limited to few users only. To increase the flexibility and to reduce cost, we build SAE/OCDMA systems using Fibre Bragg Gratings (FBGs) for en/decoders and APD receiver on the commercial Optisystem. Numerical results confirm the well matching between theory and simulation.

4. **Vo Tuan Dung & Bui Duy Huong: Efficient features for the Classification work.**

Review on System again, when the signal is captured from mobile devices and then the mobiles may forwards this original signal to the server or preprocess that signal and sends it to the server. Server must deploy a program to decide what kind of group (Patient or non patient) this signal belongs to. So, my work is about classification program at the server. The problems of classification are which features is appropriate (maintain the accuracy, speed), and which algorithm is good for classification (Knn, SVM, Fcm). Now, I am trying to evaluateand choose the efficient features.

5. **Nguyen Van Duc: Dynamic adaptive streaming over HTTP from multiple content distribution servers.**

Dynamic adaptive streaming over HTTP (DASH) is attractive. It reuses servers rather than relying on expensive streaming servers. DASH from multiple content distribution servers with Scalable Coded Video (SVC) is more challenge. Client will download part of video's segment from multiple servers. With the advantage of SVC, it offers better DASH experience, especially with HD or 3D video. I implements and compare two algorithms that attempt to optimize resource allocation among differrent servers and bandwidth utilization.

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6. Vu Trong Bach: Performance of Rectangular QAM/FSO Systems using APD Receiver Over Atmospheric Turbulence Channels

We comprehensively study the performance of free-space optical (FSO) communication systems using rectangular quadrature amplitude modulation (QAM) and avalanche photodiode (APD) over atmospheric turbulence channels. The log-normal fading channel is used in the analysis. We derive the system's average symbol error rate (SER) taking into account the APD shot noise and thermal noise, turbulence strengths, channel distances and various system parameters. We find that using APD can greatly benefit the performance of the system in comparison with that ofusing PIN photodiode. However the selection of APD gain is critical to the system performance. In addition, the optimal value of APD gain also significantly depends on various conditions of the atmospheric turbulence channels.

7. Phan Lac Cuong: Delivery media contents over wireless mesh network

Wireless mesh networks (WMN) are fast becoming the preferred way todeliver media contents in outdoor environments. WMN have some advantages:cheap, reliable, flexible, and easy to implement. With a mesh, reliable networkcan be established almost anywhere with low cost. However, WMN also havesome disadvantages: high delay, packet loss and jitter. In my presentation, I would like to show the result of measuring throughput and delay in somedifferent conditions of WMN. This result is the first basis for me to study about delivering media contents over WMN in future.

8. Nguyen Xuan Hoc: DASH and HTML5 Video Element

HTTP streaming has become a cost effect means for multimedia delivery nowadays. On the other hand, HTML5 is already making its mark on today's internet era by overcoming the limitations of its Flash and HMTL predecessors . And its core aims to improve the language with support for the latest multimedia. For the purpose of improving the Quality of Service (QoS) in Client-side adaptive streaming model, I study the use of MPEG DASH standard with HTML5 video component to stream media content .The results of this study give useful of combining DASH-standard with HTML5 technology in internet HD TV.

9. Vu Duc Trong: LED Driver for Broadband Short-Range Optical Fiber Communication Systems

Light Emitting Diode (LED) is becoming important sources for short-range optical communications and measurement equipment due to its low cost, good temperature stability and long service life. By studying electrical characteristic and exploiting physical mechanism in active region of LED, the rise and decay times of electroluminescence could be reduce significantly, make it possible to replace Laser diode in many applications. This presentation provides an overview of our current researches at Institute of Material Science, Vietnam Academy of Science and Technology and some latest results on developing broadband optical links for short-range networks such as Fiber-in-the-Home (FITH), Media Oriented Systems Transport (MOST) network and FSO systems. The presentation also introduces some measurement systems and devices developed in our laboratory.

10. Mr Ha Duyen Trung: Performance bounds of FSO MIMO/QAM Systems Over Atmospheric Channels

Free-space optical (FSO) communication systems are rapidly gaining popularity as an efficient and cost-effective means of transferring high data rates applications over short distances. However, the performance of those systems depends strongly on the atmospheric conditions and nonlinear characteristics of the optical link. Multiple laser transmitters and detector receivers can be placed at both ends to mitigate the turbulence fading and exploit the advantages of spatial diversity. In this paper, we introduce an analytical model for transmission of multiple-input multiple-output (MIMO)-based signals over wireless optical links. Further, we derive a average symbol error probability (ASEP) expressions of a free-space optical communication link using general-order rectangular quadrature modulation (R-QAM), taking into account the atmospheric turbulence effect on the FSO channel modeled by the log-normal distribution.

11. Mr Dang Ngoc: Performance Improvement of FSO/CDMA Systems over Dispersive Turbulence Channel using Multi-wavelength PPM Signali

Previous works show that, compared to OOK signaling, pulse position modulation (PPM) is favorable in FSO/CDMAsystems thanks to its energy efficiency and simple detection. Nevertheless, when the system bit rate increases and the transmission distance is far, theFSO/CDMA systems using PPM signaling critically suffer from the impactof pulse broadening caused by dispersion, especially when the modulationlevel is high. In this paper, we therefore propose to use multi-wavelengthPPM (MWPPM) signaling to overcome the limitation of PPM. To furtherimprove the system performance, avalanche photodiode (APD) is alsoused. The performance of the proposed system is theoretically analyzedusing a realistic model of Gaussian pulse propagation. To model theimpact of intensity fluctuation caused by the atmospheric turbulence, thelog-normal channel is used. We find that, by using MWPPM, the effects ofboth intensity fluctuation and pulse broadening are mitigated, the BER istherefore significantly improved. Additionally, we quantitatively show thatthe system performance is further improved by using APD, especially whenthe average APD gain is chosen properly.

12. Nguyen Van Tam: Telecom ParisTech & Cognitive Radio Systems's activities

Short presentation of Telecom ParisTech and Brief introduction of coginate radio systems and related research activities at Telecom ParisTech.