TechNomads
科技游民

PLAYAROUND09
CLASS
MENTOR & TA
HACKTERIA
ART WORK
TECHNOMADS

playground 09
WORKSHOP

TechNomads
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指導單位 教育部 prohelvetia

主辦單位

協辦單位

媒體協辦單位

PLAYAROUND

前言

PLAYAROUND 2009
ESCHER TSAI

He said that although the administration had developed various proposals, it would solicit input from Congressional leaders of both parties in coming weeks to create legislative language that can attract bipartisan support. Some details of the president's proposals are expected to be made public on Monday, when the president outlines his $3.8 trillion budget for the 2011 fiscal year.

The changes would have to be approved by Congress, which has been at a stalemate for years over how to change the policy.

Currently the education law requires the nation's 98,000 public schools to make "adequate yearly progress" as measured by student test scores. Schools that miss their targets in reading and math must offer students the opportunity to transfer to other schools and free after-school tutoring. Schools that repeatedly miss targets face harsher sanctions, which can include staff dismissals and closings. All students are required to be proficient by 2014.

Educators have complained loudly in the eight years since the law was signed that it was branding tens of thousands of schools as failing but not forcing them to change.

The secretary of education, Arne Duncan, foreshadowed the elimination of the 2014 deadline in a September speech, referring to it as a "utopian goal," and administration officials have since made clear that they want the deadline eliminated. In recent meetings with representatives of education groups, Department of Education officials have said they also want to eliminate the school ratings system built on making "adequate yearly progress" on student test scores.

"They were very clear with us that they would change the metric, dropping adequate yearly progress and basing a new system on another picture of performance based on judging schools in a more nuanced way," said Bruce Hunter, director of public policy for the American Association of School Administrators, who attended one of the meetings.

The current system issues the equivalent of a pass-fail report card for every school each year, an evaluation that administration officials say fails to differentiate among chaotic schools in chronic failure, schools that are helping low-scoring students improve and high-performing suburban schools that nonetheless appear to be neglecting some low-scoring students.

Instead, under the administration's proposals, a new accountability system would divide schools into more categories, offering recognition to those that are succeeding and providing large new amounts of money to help improve or close failing schools.

科技游民游到哪去
蔡宏賢

2009年playaround workshop工作坊的主題是科技游民(TechNomad)，從學員開始網路報名時，就已經開始接觸這個主題，科技遊民的主題原先是關懷全球經濟危機下的弱勢族群，探討這些族群如何使用數位科技，後來逐漸轉變成為應用科技與媒體的使用者，如同流浪者在數位媒體的領域中游走，該游往哪裡去呢?抱持著自由、開放與分享的態度，一個全新的微生物世界觀察與思考，環境細微聲音的聆聽與再製，擷取網路訊息的機械控制，通電的肉體穿戴上運算中的織物，還是一個pd程式的串接邏輯，這些都是參與游民(學員)們游走的線索與提示。

09年的playaround workshop工作坊課程結構，共有五組課程內容，分別由李駿(台灣)主持課程 A. PureData、林欣傑(香港)主持課程 B. 電子身體(Wearable Physical computing)、樂恬寶 Kiilo(德國) & 亞哈思 Yashas Shetty(印度)主持課程 C. 體感電訊(Network via Physical computing)、馬克博士 Dr. Marc R. Dusseiller(瑞士)& 亞哈思 Yashas Shetty主持課程 D. 駭生物(hackteria)、劉佩雯(台灣)主持課程 E. 我聽故我在? (I hear, and I remembered?)。這些課程都可以透過PureData(PD)的視覺語言程式銜接，讓各組的課程可以彼此交流與跨領域合作，講師們也讓學員們參觀了解其他正在進行中的課程，這是playaround工作坊的目的，讓不同領域的學員們可以一起自由創作。肢體的動作參數可以觸發燈光與聲音，電子顯微鏡下的生物動作能夠提供遊戲角色的現身與消匿，環境的聲音與舞者肢體的即興演出，資訊同時控制家電的開啟與音樂的播放等。

一個游民待在結合電子聲響、互動程式、網路訊息、實體運算、穿戴媒介、DIY電子電路、生物科技等跨領域的大型工作坊，除了密集的課程外，還需要與不同組別的遊民交流，同時準備最後一天的創作與成果展演，無論是游民(學員)本身、講師、助教、攝影、行政工作人員等都是絕佳(累)的學習體驗與經歷。不同領域的游民該如何連結起來？溝通、溝通還是溝通，手臂彎曲的數值可以抓到，微生物的動作可以算出座標，聲音的波長參數等待數值，游民在這裡發現了原來可以集體游動，而且游得範圍更大更廣。工作坊其實不僅在教授實作課程，更重要的是認識合作的模式，主題的意義一直在那裡，從來就沒有消失，如果學員們誤以為課程只是在學習一種技術而已，就完全忽略籌劃者刻意放了個大浮標，學習技術然後與不同領域溝通，了解串接後的意義，接著思考這個組裝的科技表皮下，藝術在哪裡?生存的價值在哪裡?如此游民們也許更清楚該游向何處?

感謝今年的playaround workshop的所有支持者及參與的學員、講師與工作人員讓這次工作坊圓滿成功，明年再見！！

I hear and I remember?!
PEI

This Taipei Metropolitan Rapid Transit (MRT) Map, Ver.12.31, as pictured above, was found on the internet. Without going into a discussion on the implementation of urban transformation, or the conflicts that did and will continue to arise as construction progresses, this blueprint representing something from the future made a huge impact on me as I went about preparing resources for "playaround09 - Tech Nomads Soundscape Workshop." It represented a gigantic interactive symphonic soundscape, with somewhere between 6 and 9 million2 performers and audience members. The song is not yet completed and is of an unknown length, but we are in the middle of the best part of the song which ought to be savored, slowly.
The preparation and implementation of the MRT project simultaneously constructs and deconstructs urban districts, as it changes life-paths. These environmental changes create a dynamic contrast in audio culture. Sounds that have been lost, replaced or converted; extended feedback; sounds created by the motion and line of motion of the performers; the demolition of physical buildings; lives and collectives changing and re-forming -- compose a musical interval that is responsive to space. Participants traveled to the workshop all directions. During the course of the workshop I asked each group to select a point or a segment on this map to make a recording.

On day one, make a preliminary investigation of the soundscape, and decide on the route of action, press "record." Day two, listen to the recording for the man-made and natural elements of the soundscape, and find a theme. The afternoon that students first brought back their sound-seeds, we immediately connected these fragments on a track. On the third day, the themes began to emerge out of each group: the wind distortion on the unobstructed river embankment and sounds of stones striking objects, led into the man-made mechanical systems of the MRT at the Taipei Main Station, followed by the Madams speaking with a local twang in a alleyway off Huaxi Street, a young foreign woman whispering and teasing, passersby flipping through pirated DVDs that are encased in plastic cases, and karaoke, the modulated looping of non-melodic electronic effects. These environmental sounds become timeless ambiance and a cross-section of memory. We observe the world through sound, using point of sound as a capturing angel for imagery and through digital wave imaging to illustrate the soundscape. Long-term memory is stored in the far reaches of our minds, an enormous database constructed since childhood. Even blurred vignettes can be recalled through a suggestive prompt. The familiarity that comes maybe a nostalgic internal sensory, or perhaps a negative emotion that has been mollified by the passage of time. An old woman who had lived through a war unconsciously and silently clenches her fists and purses her lips each year as the festive New Year fireworks ring out. The sound of joyous crowds on the street, or on the television reaches the old woman's ears and become echos of the bombings that occurred fifty years ago.

A complex synesthesia exists between long term memory and sensory organs, not an absolute relationship, but a real one. Synesthesia research has discovered a direct relationship between a sound and its corresponding color, but that there is not one standard set of correspondence, as it varies from person to person. However, there is a definite correlation, and this aesthetic is worthy of further exploration and understanding..

Over time, sensory organs and memories exchange methods of recognition. Synesthesia has always existed, but much of it has been selectively forgotten. The flint of short term memory hardly has time to sink in, and is unable to connect to the sensory database. In 2009, people sat in coffee shops, at dinner tables, on the road, in bed, on their phones, through notebook computers -- where they habitually and speedily disseminated pithy remarks through microblogs or newsgroups 2.0 A few days or weeks pass, a seemingly meaningful remark that should have been properly written down can no longer be recalled exactly. What were the exact words? Check the virtual account and after a thorough search, find that at 7:26 PM Sep 28th from web: "Realized that I scalded the yeast to death" -- merely this one line, with no mention of the fact that the bread failed to rise, and with no replies or re-tweets, recalled for me this sentence that should have vanished, and now I will no longer pour boiling water into yeast to make bread that turns tough as tree branches in the oven.

For me boiling water is the gurgle of the electric kettle coming to the boil. After listening for a moment, the short-term and vulnerable sound memory triggers a reflex to switch the kettle off. Water's boiled. Hear that? Switch it off. And it simultaneously reminds me that the teaspoons are in the right hand drawer. In that fraction of a moment, four things occur to me. In a flash, three consecutive memory-actions are performed seamlessly. But if I hear the recorded sound of the gurgle of boiling water, would I subconsciously also auto-perform these three sequential tasks? Where is the mechanism that tells me that I should have different responses to recorded sound and live sound? The media culture has made an effort to promote interactive art, and repeated emphasizes the shallow surface relationship. Yet, in the space surrounded in between words, when will we comprehend the soundscape and its space?

我聽故我在
劉佩雯

網路上尋得，台北捷運路線圖第十二版修正三版（ver.12.3），如上圖。先不論其都市改造的落實性、工程進度中間接產生的紛擾，當我正著手準備 playaround09 － 科技遊民音景工作坊的資料時，這張還屬於未來的藍圖，帶給我極大的衝擊。一部巨型的互動音景交響曲，演奏者與聽眾群約六百萬至九百萬多人不等，曲目的長度未知，未畢，而我們正處於最值得細細品味的片段當中。

捷運工程的準備與執行，極端的同步構成與解構區域的變動，生活路線的變動。聽覺文化在環境的變動中造成的反差，那些已經消失的聲音、替換的聲音、轉換的聲音、延長的反饋、演繹者的動作與動線所產生的聲音、實體建築物的拆建，生活與聚落的改變或形成，譜出與空間應對的音程。工作坊進行的同時，參與者來自四面八方，我請各小組就上面這張地圖點選定一個錄音地點、或是一段路程。第一天，音景的初步調查，決定行動路向，按下錄音鍵。第二天，再次透過錄音機聆聽自然與人為的共存音景，擬出主題。同學們帶著錄音種子回來的下午，我們即興地、多軌地串起這些片斷。第三天各組的主題漸漸地浮上來；河堤旁空曠的風阻聲與小石擊物的動作聲，帶進台北車站內火車捷運的人造機械系統，爾後，華西街小巷內的老鴇多操著本籍口音，暗暗私語的是外籍年輕小姐的笑罵，旁人翻動盜版DVD的塑膠殼與卡拉 OK，無音律的電子效果經過迴路改造再製，轉成大空永恆的環境音（ambience），切著記憶的片斷，以聲音去看世界，以發聲點為攝像的角度，更透過電子波型圖示音景自載的起承轉合。

長期記憶存在我們腦海的深處，從小建立起來的龐大資料庫、模糊的片斷都可能透過一個引子被喚醒，隨之而來的熟悉感，也許是讓人懷念的內在感官，也許是經過時間安撫過的負面情緒。一位經歷過戰火的老太太，每每聽到新年熱鬧的煙火沖天，便無自覺的抿著嘴，緊握著拳，不發一語。街上、電視裡傳來地喧嘩與歡樂地人聲，傳到老太太的耳裡，每每應對著五十年前，那段轟炸的日子。長期記憶與感官之間，保留著複雜的通感（synesthesia），非絕對但真實的關係。通感研究絕對音感與其應對顏色的實驗發現，結果多因人而異且並無一套標準應對準則，但能夠確定在音感與顏色之間的直接關係中，有更多間接關係的美學值得探討與了解。感官與記憶因時間的影響，改變互換互通的認知方法，通感（synesthesia）一直是普遍地存在，多被人們選擇性的遺忘了，而短期記憶的電光火石還沒來得及沉澱，大多無法與感官資料庫產生連結。2009 年的人們飛快的，並也習慣性的從咖啡廳，餐桌前，路上，床上，手機，小筆電，透過微型部落格或朋友圈2.0 丟出一句話，幾天，也或許幾星期之後，那句似乎有意義，該好好記下來的一句話，卻怎麼也回想不起自己當時是怎麼說的，回頭馬上往虛擬帳戶中翻箱倒櫃，找到了 - 7:26 PM Sep 28th from web “原來酵母被我燙死了” - 只推了這句，沒推麵包發不起來的事實，沒得到任何回響和嘰啾語（twitty），但我現在記住了這句本應該消失的話，不會再用滾燙的水將酵母泡開，做出進了烤箱後變成樹根的“麵包”。全開的開水對我而言，應對著是電水壺煮開時的聲音，那咕嚕咕嚕的聲響，短暫而易受干擾的聲響記憶，聽了一會兒，下意識地隨手就切掉電源，水開了，聽到了，就該關掉，也提醒了我，小湯匙在右手邊的抽屜裡；那一剎那，我總共理解了四件事，一瞬間，完成了記憶與行動無礙的三個連續排程。下次若是從錄音機裡聽到水開時咕嚕咕嚕的聲響，我是否會無意識的自動完成三個順序排程？哪來的平衡機制告訴我錄音與實況音景該做出不同的連貫反應？媒體文化努力推行的互動藝術，再再強調表層的淺關係，而圍繞在字旁的空間，我們何時才能體會其聲響與空間的音景？

PLAYAROUND 前言

KEITH LAM

Extending from the myth of electronics to the electronic body is a process triggered from outside to inside. This is a transforming process derived from Playaround 2008 - Which to me is also an exploitation state in the Electronics Arts field.

Speaking of New Media Arts and Digital Arts, I personally prefer the term "Electronics Arts". "New Media" very often refers to a connotation that entails "time" and "change". "Digital" gives a direct meaning that could be replaced with technical computing. However, Electronics Arts isn't as biased as the other two. It even allows artists to generate less-restricted thoughts in the creative industry - Including using our body as a type of media / medium.

Our bodies are mediums - our brains to others' brains, environments, objects, communication mediums, etc. Take our body as an example - it represents our brain, and functions as an electronic computing interface. The transformation, input, process and output, can be applied to the functionality of our body that always repeats itself.

Can you imagine each part of our body can be an input access since our body is the interface that connects with other objects. Every pore of the skin is an essential sensor to the environment!

The biggest focus of Electronics Arts has always been the process of manipulating "input-process-output". Artists pay close attention to a certain state of the process, and further observe or overturn their focus. This year at Technomads workshop, we tend to encourage our students to discover their bodies - What are we sensing? What are the processes?

We starts off using our body as the main medium, and transfers energy as electricity flows all over our body. Transforming energy is the fundamental process when getting started with Electronics Arts. Transforming electricity to sound, imagery, or kinetic energy are the more common ones. Use different body parts as resistances, we are able to hear the "noise of our body". Cooperate with others and make distinctive sounds / noise - Participants even clip their ears or suck in wires... These are just a few experimental ways to rediscover our body as a main medium.

Take it to another level. We stick a second layer on our skin to sense a deeper perception and feeling. The feeling that has been existed, but never been discovered. Most important of all, to, again, feel our body, environment, and all the bits and pieces ready to be revealed.

林欣傑

由機械的迷思伸延到電子身體，這個是由外到內的發展過程，也是由2008的玩趣工作坊到2009科技遊民的發展，也是我自己這兩年對電子藝術的探索過程。

要是說新媒體藝術（new media arts）或數位藝術（digital arts），我比較喜歡電子藝術（electronics Arts）這個名字。新媒體的新這個會因時而變的形容字，或數位即差不多等於了電腦運算的直接了當，電子藝術的電子這個詞對創作時所用的媒體／方法沒有一刀切。但卻對媒體給予更大的思考空間。包括以我們的身體作為一媒體／媒介(media/medium)。

我們的身體本來就是活生生的媒介：我們的腦袋和別的腦袋，周圍的環境，四周的物件的溝通媒介。如果很不人性，用一個電子運作過程去形容的話，身體就是我們腦袋和其他所以我們要接觸事情的一介面（interface）。這類冷冰冰的電子媒體轉換，由輸入(input)，到處理(process)，到輸出(output)，基本上我們身體每分秒都在進行這類輸入處理輸出的過程。

如果身體是跟外界接觸的介面，你可以想到我們的身體每寸都是這個介面的輸入點。單單皮膚的每個毛孔就是對身邊環境的最緊密的感應器（sensor）。

電子藝術的創作，一直都在玩這個input-process-output的過程。可以針對某個過程來玩來顛覆來探討。在科技遊民的電子身體工作坊，就是讓學員去思考一下我們的身體：我們的身體在感應甚麼？在進行甚麼樣的處理？

工作坊一開始就讓學員來玩命：把電流過身體。電子藝術的根本其實在把電這個東西進行能量轉換。把電變成聲音，把電變成視覺，把電變成動能。這都是一種換能的過程。先來利用身體的不同部份來作為電阻，來一次個人的電流過身體，化成燥音。這個就是身體所發出的燥音。再來是集體被電，多人集合化成另一種古怪燥音，用聽覺來感受身體作為媒介的迷思。學員們的瘋狂演繹：把電夾夾到耳朵，把電線含在口裡，鐵定要拿自己的身體來對媒介迷思的關鍵實驗。

然後再為自己的身體貼上第二層皮膚，為本來的身體感應器添加或顛覆功能。要去感應一些本來感應不到的，去聽一些聽不到的，去看一些看不到的。或者是去看一些聽到，去聽一些看到的。這本來都是屬於身體的一切知覺，利用身體，配合腦步，去經歷種種已經存在但沒有經歷過或被發掘過的種種。過程中，我們不只在利用自己的身體，更是在這個遊歷裡再一次認識自己的身體，認識自己身處的環境，認識我們身體和其他外在物的種種關係。

CHUN LEE

December 2009 marked the second edition of the Playground workshop, named TechNomad. I have been fortunate to be invited again to lead one of the modules, and would like to use this opportunity to express my thanks, as well as giving a quick review of the event.

Since the first Playaround workshop, a few things have changed in the TecNomad, most notably being the location and the main sponsor, as a result have brought subtle differences to the event. To me, these changes have in general contributed to a more relaxed learning environment for everyone, thus making the whole experience more casual and less stressful. Such an effect can really be felt daily in the classes not only amongst the students, but also between them and the teachers. Personally, this is the most improved aspect in TechNomad.

Same as the year before, the module I was in charge of is "programming in Pure Data(Pd)", which involves teaching the basics of computer programming, and using Pure Data as the chosen language for experimentation. More importantly, this module intend to show how making art and computer programming relates to one and another. Because this module demonstrates how Pd can be used as a programming language, rather than ready-made software patches, it is hoped that by attending this module, students would be able to either write their own Pd program, or modify existing ones, when collaborating in groups with students from other modules. For example, being able to write Pd programs that interprets and make use of the data captured from the sensors made in other modules.

Even though it is the same module, I, however, have decided to approach this year's workshop in a slightly different manner. In the first year, although the course was also mostly practical, I felt that there was still a little too much technical theory in the teaching, thus making the information harder to digest for students who tried to program for the first time. By this, I am referring to the overuse of technical terms, as well as explaining logical operations in an abstract way, in which all can make students feeling alienated with the subjects. Furthermore, I also would have liked for students to discover the need for certain programming techniques before them being introduced. In my mind, only when one felt the need for something and learn it, makes the most effective learning. Having observed what can be improved from the previous workshop, I have concluded that the following three aspects would be the main changes when leading this year's workshop:

1. Avoiding use of technical or difficult terms.
2. Explaining in practical context, not abstract concepts.
3. Guiding students to discover problems, rather than introducing them.

The content of the course otherwsie remains more or less the same as the previous year. It includes introducing programming building blocks such as simple arithmetics, conditional statements and looping mechanisms. It then extend these basic techniques to build practical algorithms such as various types of step counting to store/retrieve data differently and so on. These algorithms are built in the context of simple sound synthesis and computer animation. For instance, by having step counter reading off an array, we used this to play back audio samples stored in the memory. Furthermore, by performing simple arithmetic on audio signals, we were able to modulate and control interesting sounds that are being synthesized. Lastly, we also looked the possibility of transmitting messages over the network using the Open Sound Control protocol, thus enabling different programs and patches to exchange and share information for collaborative works.

Naturally, many students found it intimidating when trying to grasp and use Pure Data at first, especially towards the mathematical and logical aspect of computer programming. However, having made the conscious effort to change the way its taught, I think, has helped to a degree on students' overall experience. Such effect was also noticed by the teaching assistant who took part, as a student, in the previous playaround workshop. Moreover, explaining programming techniques directly using practical example, instead of abstract theory first, has really helped in generating student's interests to explore beyond what's being taught. On many occasions, the class became open discussions on what each other is doing and we took turns to solve the problems that they encountered. Also owing to these open conversation and problem solving, the atmosphere of the workshop were friendly and easy-going, where people were more vocal of their opinions and questions, which to me, is an very encouraging situation to observe. As constructive as these discussions may be, the depth of teaching therefore had to be sacrificed a little in order to accommodate them. However, at this level, it is more important to relate to what students are doing or like to achieve, in order to generate further interests after the workshop.

In conclusion, although some aspects of the TechNomad workshop were quite different from its predecessor, it nevertheless still produced an wonderful event and great energy around it. In some ways, it is the changes that gave us the momenton to push forward in its evolution. Therefore, I would like to give my deepest gratitude to those who laboured day and night to make it happen, as well as the kind support from the NTUA university. With the next edition of Playaround already in planning, I am sure we will be looking forward to get together once again to play around with ones and zeros.

李駿

我很榮幸受邀至2009年12月Playaround所辦的第二個工作坊 "TechNomads"，在這裡我想先謝謝大家並且談一談在這次工作坊得到的一些心得與看法。

這次 TechNomads 工作坊跟之前辦的工作坊不太一樣。其中最明顯的差異是地點和主辦單位。這或多或少改變了工作坊的形態。然而對我而言這次的工作坊提供了大家一個較輕鬆自在的學習環境，透過每天學生和老師之間的互動就可以觀察出來。我自己覺得這是Playaround今年最大的突破。

跟2008年一樣，我今年負責的部分是 "Programming in Pure Data (Pd)"。這次的課程包括程式語言的基本練習和運用 Pd 作為發揮創作的工具。更重要的是怎麼把藝術創作和程式語言結合在一起。由於這次的課程是教大家怎麼使用 Pd 這個程式語言，而非將它當作現成的套件，我希望學生們可以自己寫 Pd 程式或是能在分組合作時與其他課程的學員一同編組或修改現有的程式。舉個例子，把其他課程得到的資料拿進 Pd 加以運用、編組。

即使這是跟 08 年一樣的課程，我還是決定在教學上做一點小小的調整。上次的經驗是，即使大部分都是實做的內容，課程中理論的部分還是嫌太多。這對第一次學 Pd 的學員來說實在有點吃不消。（其中包括了過度使用專業詞語和抽象的概念傳達，這些都有可能讓學員感到疑惑。）這次希望學員能更主動的學習，在教學前就能自己先摸所一下。我認為一個人有某項需求而想要去學習，是最有效率的學習方法。以下三點是我整理出來跟去年不太一樣的教學方式。

1　避免使用太難的專業詞語。
2　以實用為主，而不是以抽象的概念作為導向。
3　自學！而不是不停的教學。

課程內容和 08 年大致上是一樣的，包含了簡單的計數、條件句和迴圈機制，進而運用到演算法。延伸應用不同種類的計數來儲存／恢復資料。這些演算法都建構在簡單的聲音合成和電腦動畫之中。 簡單舉例，拿計數器來讀一陣列，用這個方法我們可以播放已存的聲音檔。此外我們也可以透過加數？計數到音訊上的方式來改變或控制已產生的聲音。最後我們要用 Open Sound Control 透過網路將這些資料傳送出去，在合作的時候才可以跟其他組所使用的程式互相分享資料。

學員一開始碰 Pd 時都會感到困難，特別是到了要運用到數學和邏輯的觀念（時x）。(但x)這次我改變了教法，我相信對學員的理解上多少都有些幫助。就連去年還是學員的助教也都感受得到，實例的操作遠比教一堆抽象的理論更能引發學員求知的慾望，當然也對他們的學習更有幫助。很多時候上課是開放式的，大家互相學習，當有問題的時候我們就提出來一起討論。也因此整個工作坊的氣氛非常輕鬆和樂，大家都勇於發言、發問，這對我來說是很大的鼓勵。由於花在討論上的時間上相對增加，課程內容自然不能非常深入，但這個階段我覺得應該把重點放在他們正在做的東西和想做的事情上面，這對學員日後的發展會更有幫助。

這次工作坊的結果雖然跟預期的不太一樣，但仍然非常成功。從某些角度來看，也是因為這些改變使得工作坊不斷進步。最後我想要特別謝謝那些沒日沒夜的工作伙伴還有提供大家許多幫助的台藝大。隨著下一個已在籌備中的工作坊，我們 2010 playaround 見！

PLAYAROUND

TOBIAS HOFFMANN

With many enlightening examples, Dieter Daniels unveils the deep interconnections between art and technology. Early developments of modern technology were driven by artistic vision, as well as technology was influencing artistic imagination and expression. For example, the invention of telegraph as the early example of physical computing, as its best I would say, created by the artist(!) - Samuel Morse, by using a canvas stretcher a soleneoid and a pencil. For artists technology, computers and electronics are nowadays given, also it is esential for creative thinking to look through the foundation and history of technology. By doing so, workshop is a good format as a good cause to look into the rear view mirror on our road into future.2

While we are using the computer, we meet all sorts of applications, they greets us with forms and buttons, with procedures and functions we often first take for granted and second do not understand their presumptions. On the internet we communicate, send photos, video and sound without knowing how it works. But sometimes there are questions, why can't we do what we want to do? Maybe we realize there are presumptions deply enrolled in all software programs. A program is the result of a programmers mind. Expectations of possible inputs and possible outputs are torching programmer's mind while s/he is developing the program. On the other end, people who are working at the computer often feel somehow detached from their surrounding, it seems like the media machine which has won the fight about forms and attention in the fields of our perception and cognition. It is important not to forget comunication is not a one way act for users/consumers (readers of software) as well as for programmers writers/creators of software. To mention here, the success of WEB2.0 is based on on the simple but basic fact that humans like to talk to their peers. The view in rear mirror of media history can help us to understand, that by using "the machine" we are also teaching programmers to do the better programs. Or if we program a bit by ourself, we learn how to "mesh" information together. For example with facebook or plurk, we know what's going on within friend's network. In the "hands on" attitude of a workshop there is a guiding question involved and gaining significance - how to connect things? It is also a question howto connect people.

In the module Networked Physical Computing participants experienced first, that their own computer was controlled by a central computer in the network. Messages where broadcasted to everyone, participants realized a mechanism analog radio broadcast existing in our computer network devices. We had the sense of synchrony by using a step sequencer over the network. Also we could chat in a custom built chatroom (back channel) by using the same methods and technology. The participants were taking over by "hacking" into the broadcast stream, getting also control over other computers. This could be transformed into an orchestrated approach where computers are acting as data gathering and enacting nodes in a communicative network.

Realizing that we where sourounded by ubiquitous interconnected networks, we could try to patch them together by knowing their triggering messages. The basic LED blinking examples where extended further to drive a real 110V power plug, it was possible to drive, for example, a juice mixer or toaster. Doing a workshop like this is not about learning merely a skill, a new tool or doing some impressive tricks, those often are the criticized part of new media curricula in art institutions for a good cause. It is more about enabling people to gain a creative momentum of how culture is shaped and transformed through media.

The history of technology is full of utopias and visions what technology would be able to do. For an artist outlook this path could be very fruitful to follow and a great free space to explore. Imagination is still wider than that what has been done. In the end maybe we understand that all this machinery around us is built by humans in aiming of staying connected toward humans. Critical thinking, experimenting and being creative finally enables us to gain literacy, how media is shaping culture, shaping perception and the construction of ourself.

1. original german titel as "Kunst als Sendung", page number where quote appeared, author, publish house, year,
2. Marshal McLuhan "We look at the present through a rear-view mirror. We march backwards into the future." and Inke Arns, Dissertation "Russian Avantgarde - Objects in the mirror may be closer than they appear!"

TOBIAS HOFFMANN

Dieter Daniels 介由許多的例子為大家解說藝術和科技之間更深一層的關係。早期的現代科技大多是被藝術所影響，然而科技也相對影響藝術的發展，例如早期的電報就是由藝術家 Samuel Morse 所發明的，他用帆布架，電磁鐵，和鉛筆做成。對藝術家而言，科技，電腦和電子產品隨手可得，重要的是如何運用創意來觀察科技的歷史。工作坊其實就是幫助我們回顧歷史最好的方法。

當我們使用電腦時，我們會用到各種軟體，一開始這些程式會介由圖像或按扭跟我們互動，但我們往往忘了他們本來的功能，只是把他們當成工具使用。透過網路我們可以溝通，傳送圖片和影片，但確不知道背後是如何運作的，有時會有些問題，為什麼我們不能想做什麼就做什麼？也許我們了解所有的程式都有自己的基本功能定位。程式是一個工程師的心血。當工程師在寫程式時，他一定對其有所期望。相對的，使用者跟環境的關係常常是疏遠的。重要的是不能忘記溝通是雙向的，不論對使用者或工程師來說都是。順便一提，WEB2.0 就是用這樣的原理：人們喜歡跟他人溝通。回頭看媒體的歷史可幫助我們了解藉由使用這些工具，我們其實也是在幫助工程師寫出更好的程式。如果我們自己可以多少寫一點點程式，那麼對於資訊傳達間的關係一定會有更深入的了解。Facebook 和 Plurk 就是很好的例子，他讓我們得到自己和他人之間的資訊。這次的工作坊主要就是強調如何將東西連結在一起，同樣的，如何把大家連結在一起。

今年我們這一組先讓大家了解自己電腦和主電腦之間的網路關係。訊息會由主電腦發出傳送給大家，這時學員了解電腦的網路溝通系統。我們也體驗到使用計數器在網路上做成的同步效果。我們也可以用同樣的技術在自己另開的場域跟想說話的人溝通。學員們都忙著扮成駭客，在網路中四處遊動。電腦的功能就是把所有的點串連起來，成為一個溝通的工具。

我們其實是被很多相關的資訊包圍著，只要稍微改變相關的訊息就會對其他的網路造成影響。進階的範例是把閃爍的LED改成由110V啟動的開關裝置。這個開關裝置可用來控制許多電器，例如果汁機或烤土司機。參加工作坊不只是學一個技能或耍耍把戲而已，更重要的是觀察媒體對文化造成了什麼影響和改變。

科技的歷史常常讓我們覺得科技應該是什麼，但對一個藝術家而言，若能看的更遠，這對他的創作會有很大的幫助，因為創意是無邊際的。我們最終都了解科技產物是為了人類的需求而被創造出來，然而最重要的還是創意本身的理念和媒體是如何改變文化與人們的思想。

CLASS 課程內容

課程 A：PureData
講師：李駿
應援講師：陳惠娟，鄭鴻旗

Day 1. 簡介
上午 Pd 與自由軟體簡介 Pd 下載及安裝 Pd 使用者介面介紹及操作
下午 編程(程式設計)簡介 Pd 中如何編程? Pd 中聲音合成的機置
Day 2. 數位聲音編程
Pd 中數位聲音之控制 網際網路訊息傳遞及 OSC 簡介
下午 OSC 在 Pd 中的應用 網際網路加上聲音合成
Day 3. 習作 上午+下午 習作練習 分組討論 觀摩其他組別
Day 4. 影音與串流
上午 習作討論 Pd 動畫簡介 數位聲音，數位動畫，網際網路大混搭
下午 成果發表之討論及發問 協助各組之技術研發
Day 5.發表 成果發表排演及練習 成果發表!

課程 B：電子身體
講師：林欣傑 Keith Lam
應援講師：曾煒傑 & 陳威廷

Day 1. 電子身體
新生物電：讓電流通過身體，拿你的身體來拼！
幻化身體：身體成為介面、媒體
控制組體：啟動原子小金剛的電子腦 LilyPad 和 Arduino
光之身體：讓身體發光
發聲身體：讓身體發聲（？！）
Day 2. 織！電子時裝
著物符號：電子線路織法
身體感應一：第二層皮膚有感
發光織物：LED電子走秀
Day 3. 身體和環境的迷思
身體感應二：感應身體
身體以外：感應環境，把環境內容輸入身體
除了感應，還有呼應：能量輸出
Day 4. 腦震盪時間
植入皮膚：電子身體作品問語
Day 5. 走秀！

課程 C：體感電訊
講師：樂恬賓 Kiilo & 亞哈思 Yashas Shetty
應援講師：張凰鈴 & 郭羅

Day 1. 簡介及範例
LED + arduino + computer + keyboard + mouse + network + a lightbulb = worldwide
It's all about connection
arduino basics - In/Output
arduino with PD
arduino and processing
play a bit
Day 2. 殼內的裝置
have a detail look into your tools... try connect with twitter API !
...processing
...arduino
EtherNet shield
send Light On / Light Off from twitter
play a lot ...
Day 3. 重新發覺舊玩具
play again with your old toys.
share your findings... connect to worldwide environment data via pachube
relax and play
refine our findings
Day 4. 遊戲準備
brainstorming
refine technology
play and prepare
Day 5. 展覽
Share Share Wildly

課程 D：駭生物與電訊有機體
講師：馬克博士 Dr. Marc R. Dusseiller & 亞哈思 Yashas Shetty
應援講師：林沛瑩 & 李易恆

Abstract
The workshop is an experimental make-workshop with multilayered outcome for people interested in BioArt, DIY-biology, microscopy, audio/visual experimentation and simple technological interaction with living microorganisms. Participants will become involved in sourcing and isolating microorganisms such as tardigrades, nematodes, daphnia and rotifers, hack webcams to be used for live-video microscopy and then develop free libre open hardware and software environments with which these organisms can be both viewed and become the subjects for simple interactions.

Description
In this workshop the experiments will take place in a microscopic view of living microorganisms (e.g. water bears aka tardigrades, amoebae, nematodes and collected organisms from urban environments), which appears to be a world by itself - maybe due to the scaling and the amplification of a microscope, but maybe also due to all parameters of imagination that the microcosmos provokes. With the image and the movement of the organisms, the participants are encouraged to collect inspiration and bridge video and sound to what they experience with these small "animalcules", as termed by their first observer Leeuwenhoek in 1677. A primary aim of the activity is to demonstrate that scientific/artistic experimentation can take place within the DIY and open source domains, and that biology and custom electronics can be friends. The activities of the workshop will take place in 'close-up' that is to say that a central focus of the activities will be the hacking of webcams to build DIY video microscopes. A small hack to the optics of a standard webcam allows to create video data, with a magnification of around 100 to 400x (depending on the model and the setup) at a working distance of a few mm. The highest magnifications can be achieved by inverting (putting upside down) the lens. Addition of good lighting (using a microcontroller (Arduino)) by the use of leds allows to create images using a bright-field method (shine through the stuff) or dark field method (shine from the side and look at the reflections and scattering).

The participants will learn
How to hack webcams to be used as microscopes, observe the behaviour and motion of the waterbears and other microorganisms, hack into electronic devices to integrate into bioelectronic culture devices and build habitats for the animals.

Software
The software will be based around the use of Pd (and some of its libraries) and Arduino. The DIY video microscopes will allow various forms of video tracking via PiDiP and its possibilities for generation of sound and visual environments through Pd. Participants will also be free to use Processing / Wiring or any other open source tools they prefer.

Day 1. 電訊生物 BioElectronix
1. 電訊生物簡介
2. 安裝 webcams
3. 駭 webcams
4. 微觀與事物的尺標
5. 第一次觀測
Day 2. pd & 顯微鏡
6. 改進顯微鏡裝置
7. 光與對焦控制
8. pd與顯微鏡
9. 看 microscopy
Day 3. 生物電訊與感應器
1. 城市的微觀散步
2. 觀察與討論
3. 生化與 Arduino
4. 生活感應器
Day 4. 活化影音
1. 顯微鏡設定完成
2. 活化影音媒體實驗
3. 展覽與作品腦力激盪
4. 關於微小有機體
Day 5. 展覽
我們的培養皿 / Our Culture

課程 E：我聽故我在？
音景 / 講師：PEI
應援講師：陳怡秀、王文瑜

Day 1. 簡介
1. 種子、編排與研展、作曲（即興）
2. 聽音景作品與分析
3. 微音景及社群田調練習：自然與人為的共存音景
4. 認識器材與軟體（其他可收音的方法或感應器）
5. 錄音旅程（定點與移動錄音）
Day 2. 一同散步
1. 論徑聆聽！
2. 數位錄檔、剪輯波形檔、消除噪音、基本調變。
3.聲音設計與配樂：看些電影片段。
實驗譜曲與提題。
頻譜分析 / 聲化視覺
其他課程參觀

playaround workshop

MENTOR 師資

LEE CHUN

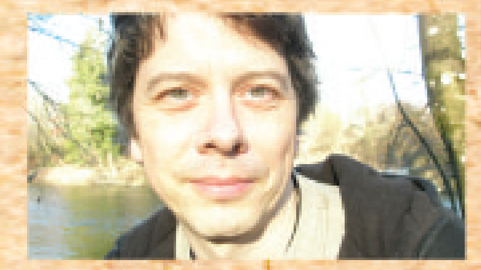
workshop module A. Pd
http://sonicvariable.goto10.org
A Taiwanese sound artist currently based in London,UK.
With a background in classical music,
he is also a PhD candidate of Sonica Arts
at Middlesex University

李駿是一位居住於倫敦的數位藝術工作者。自從 2004 年起，他將創作完全投入於對於自由軟體在數位藝術上的研發及推廣。他是法國非營利新媒體藝術組織 GOTO10 的一員以及倫敦 OpenLab 創始者之一。他在許多相關藝術節演出以及自由軟體技術的教授，同時也在 2008 年取得 electronic/sonic arts 博士學位。

KEITH LAM

workshop module B.Wearable Physical Computing
http://www.the-demos.com
Born in Hong Kong at 1980, an new media arts artist, Artistic Director of an new media art group "dimension+".
He was an Instructor at the School of Creative Media,
Technical Director and consultant of Microwave International New Media Arts Festival.
His artworks have been invited to numerous festivals around the world,
including Ars Electronica Festival (Austria), FILE 2009 (Brazil, Sau Pualo),
Split Film Festival (Croatia), AveCom (The Netherlands),
Microwave International New Media Arts Festival (Hong Kong) and Hong Kong Arts Biennale (Hong Kong), etc.
His work "Moving Mario" has awarded the Honorary Mention in Ars Electronica 2008 Interactive Arts Category.
Because of his effort and remarkable achievements on arts,
Keith has awarded Award for Young Artist (Film & Media Arts) of Hong Kong Arts Development Awards 2008.

1980出生於香港，為新媒體藝術家，現職藝術團體dimension+ 藝術總監，香港理工大學設計學院和香港藝術學院的客席講師。曾任職香港城市大學創意媒體學院導師。「微波國際新媒體藝術節」擔任技術總監及顧問。他創作的作品曾經被邀請到世界各地多個藝術節展出，包括Ars Electronica Festival（奧地利電子藝術節），FILE 2009（巴西聖保羅），Split Film Festival（克羅地亞），AveCom(荷蘭)，台灣數位典藏藝術節，微波國際新媒體藝術節，Wikimania 2007，誠品的國際孜書法展中聯合創作作品 "書法.空間.運算" 和 香港藝術雙年展2003 等等。其中大型互動裝置『Moving Mario』獲得電子藝術界桂冠－奧地利電子藝術節（PRIX Ars Electronica）2008 互動藝術組別的榮譽提名。其在藝術上的努力及成就讓他榮獲香港藝術發展獎2008之藝術新秀獎（電影及媒體藝術）。



TOBIAS HOFFMANN

workshop module C. Network via Physical Computing
http://kiilo.org
Media Artist, a Neo-dadaist who likes to bridge object and code with Arduino.
2007 - 2009 the Director of NewMedia Studio, FHNW, Switzerland.
2009 - now FreeBSD sever + database engineer for openbroadcast.ch.

Tobias Hoffmann (kiilo) 是一位新媒體藝術家，達達主義的擁護者，在物件與程序碼之間，試驗當下的串連方法，並以 Arduino 應用及創作互動藝術的電子玩具駭客。曾任教於瑞士西北聯盟大學 (FHNW) 新媒體藝術工作室主持人，目前為開放廣播社群 (openbroadcast.ch)的伺服資料庫與網路工程師。

MARC R. DUSSEILLER

workshopmodule D. biolectronix
http://www.dusseiller.ch/labs
http://www.mechatronicart.ch
http://hackteria.org
Marc R. Dusseiller is a transdisciplinary scholar,
lecturer for Micro- and Nanotechnology and artist.
He works in an integral way to combine science, art and education.
He performs DIY-workshops in lo-fi electronics, music and robotics,
has made various short movies and is currently developing means to perform biological science (mammalian cell culture, microfluidics, live-microscopy) in a DIY fashion
in your kitchen or your atelier. He is also co-organizing dock18, Room for Mediacultures,
and various other engagments like the diy* festival as the president of the Swiss Mechatronic Art Society, SGMK.

馬克 跨領域的研究遊走於藝術、科學、實驗電子音樂、發明奇特小型電子樂器、製作短片及像素（pixel）動畫、夜店、森林鐵路與蓋木屋等等。蘇黎士理工學院（ETH, Zurich）科學實驗室研究員幾年的經驗，馬克的（後）博士研究範疇專注於：手術工程應用的微生化人工智慧、奈米 3D 科技、生化物質。並潛心於對 DIY 電子樂器的愛好，策動 physical computing 的創作工作坊，diy* festival、蘇黎士藝術與科技節日。

YASHAS SHETTY

is an artist and educator based in Bangalore.
He is currently an Artist in Residence and faculty at the Centre For Experimental Media Arts at the Srishti School of Art, Design and Technology in Bangalore,India and an artist in residence the National Centre For Biological Sciences in Bangalore. His practice explores working between various disciplines including installation, sound, software and biotechnology. In 2007, he helped start the Centre for Experimental Media arts at the Srishti School of Art, Design and Technology.
He is currently working on developing an open source framework and community for artists and designers working with living organisms.

亞哈思 定居於南印的班加羅爾（Bangalore），許提（Srishti）科技藝術與設計大學的實驗媒體藝術 & 國家生技科學中心的駐校藝術家。他的研究橫跨裝置、聲音藝術、軟體與生化科技。2007年協助創立許提科技藝術與設計大學的實驗媒體藝術中心，目前專注於建立開源軟體藝術家社群，並以有機體/生物為藝術創作主題。

PEI

workshop module E. I hear,and I remembered?
http://www.little-object.com
Pei has dabbled in a variety of digital domains, but has concentrated on sound design, composition and streaming video art since 1999.
Her work has been influenced by neo-dada, freeform jazz as well as avant-garde electronic musicians and minimalist painter/composers.
She made music pieces for radio, animation, dance,theatre projects and installations as well organising and performing at experimental electronic music events.
One of her radio piece + un canny +
received Honorary Mention of Digital Music in Ars Electronic 2007.

1977 年生，把玩各種數位格式，被糟電腦運算轉換者，深信這讓中抽離人性的重組編程，概念化。她的作品深受新達達、爵士樂、當代電子音樂和環境聲音的影響。曾任數位（錄音）工程師及多媒體工程師。她曾經發表的聲音作品包括 > pin < '05 年 bias 台灣聲音藝術實驗曲，電台作品 > un,canny < '07 年 Ars Electronica 奧地利電子藝術獎的數位音樂榮譽提名。

TA 助教

Chen, Huei-chuan

Huei-chuan Chen is a postgraduate student majoring in digital media design at Yuan Ze University and worked as a game designer at the Softstar Entertainment Inc. in Taiwan. Her research interests include interactive installation and game design in public space.

陳惠娟(娟娟)，1983年生，畢業於中正大學傳播學系，曾擔任遊戲設計師，目前就讀元智大學資訊傳播所數位媒體設計組。由於興趣廣泛，從數位藝術、互動設計、心理學、遊戲設計到日本ACG文化及都有涉獵。曾受到2004年數位內容競賽、中華電信數體加值大賽及新傳獎等肯定，目前進行公共空間中的互動聲音裝置設計研究。

Chen Wei-Ting

Born in 1984 in Taiwan Kenting. Graduated from the Department of Information Communication at Yuan Ze University, currently studying for the Graduate Institute of Networking and Multimedia, major in Human interactive design. Present research focuses on physical computing and wearable computing.

陳威廷 1984年出生於南台灣墾丁，畢業於元智大學資訊傳播學系。目前攻讀台灣大學資訊網路與多媒體研究所博士班，主修人機互動設計。目前感興趣於physical computing 以及wearable computing.

Guo, Nathen

Renmin University of China in Beijing, major in new media design now transfer to NTUA and this is my third year of college life ever learned opensource interactive software like context nodebox processing arduino strong interest in interactive media design, yet no big installation while i have a showcase in www.vimeo.com/6642678

郭權 中國人民大學新媒體設計系，目前在台灣藝術大學交流學習，讀大三，接觸過 context, nodebox, processing, arduino 等開源軟體，對互動媒體藝術很感興趣，暫時沒有大的互動裝置作品，只有一些小型的~

Alpchris Chong

Malaysian. Work experienced includes advertising design, public relations, event, development, strategies planning and marketing research in Malaysia, Hong Kong and Shanghai. Earned a 2 years NCTU Teaching Assistantship as a final year master student to pursuit higher education at Institute of Applied Arts, NCTU. Awarded as Oversea Chinese delegate for the 10th China Synergy Programme for Outstanding Youth (CSP10) — Representative of NCTU from Taiwan. In 2008 Mar-Dec, worked as ITRI ambassador in office of marketing communications. Currently worked as the 3rd MOCArt Ambassador. Promote exhibition and event of Museum of Contemporary Art Taipei. Also, one of the design team for National Science Council. On progress thesis industry-led research is related to ATM user privacy experience. Creative approaches used processing / interactive installation, 3D animation and graphic design. Specialized in HCI research, interaction design, user experience design, research methodology, visual communication and interface design.

張風鈴 馬來西亞人， 曾在馬來西亞，香港和上海擔任有如設計，公關，展覽，產品發展，策劃宣傳，廣告和市場調查之類的工作。目前是領取交大2年全額助教獎學金在應用藝術研究所的碩二研究生， 近期入選由中國/香港舉辦的2010第十屆「海外傑青匯中華」傑青--台灣交通大學代表。2008年3-12月也曾工作於新竹工研院公關部/展示館之形象大使，目前擔任台北當代藝術館第三屆駐校代表，推廣有關台北當代藝術館的展覽與活動。除此之外是國科會「前瞻概念設計」計畫交大研究團隊組員之一，另外進行中研究是ATM使用者隱私體驗產學合作碩士畢業論文。創作方式為程式/電子裝置，3D動畫和平面設計。專長為人機互動研究，互動設計，使用者經驗設計，研究方法，視覺傳達和介面設計。

Lin, Pei-Ying

Graduated from National Tsing Hua University, B.S. in Life Science. Participated in the production of Magic Garden in 2008 Taiwan International Children's TV & Film Festival, and exhibition "Dialogue between Heaven, Earth, and All Beings" interactive installation in NTMOFA. Right now is searching for a way to enjoy the pleasure of doing science and art at the same time.

畢業於清華大學生命科學系，曾參與2008台灣國際兒童電視影展魔法花園、《天地與眾生的對話--當陽孜與無疆界數位創作》製作，目前正尋找能同時得到科學與藝術樂趣的方式。

Lee, Yi-Heng

Yi-Heng Lee is a postgraduate student of Yuan Ze University and study in digital media design concentration. His work "Chemical Sound" has been exhibited at the Taipei Digital Art Center in 2008; the other work "Fuzzy Zone "is demoed at DeSForM 2009 workshop in 2009. He has awarded K. T. Creativity Award in 2007.

李易恆 1984生於台北。畢業於淡江大學資訊傳播系。目前就讀於元智大學資訊傳播學系碩士班數位媒體設計組。從一個整天胡思亂想愛畫圖的小孩變成了以互動科技未來前努力的大孩子。2008於台北數位藝術中心展出實驗性互動裝置作品「化音」，2009於DeSForM international workshop上展出實驗性互動裝置「Fuzzy Zone」。2007年曾獲「KT科技與人文藝術創意競賽 」互動科技藝術組銅獎。

Eshow

Eshow is a postgraduate student of Yuan Ze University and major in interactive design · new media art and digital music. she likes to observe on human events and social interact in everyday life. Now her research focuses on interactive image and sound design and mapping. Her interactive work "Split Second" will be attended the SIGGRAPH ASIA 2009 poster in Yokohama.

陳怡秀 目前為元智大學資訊傳播系數位媒體設計組碩士班學生。主修互動設計、社會互動與新媒體藝術，專長為數位音樂、影像等互動媒體製作，喜歡觀察生活中看見/聽見的一切事物，並思考那些看不見/摸不著的情緒感受與人際情感連結。目前研究以互動音像設計為主要目標，2009年作品「時光跡」獲選入第二屆SIGGRAPH ASIA 2009 POSTER 展出。

Wang, Wen-Yu (TW)

A member of infinite universe.

王文瑜 2009年加入實驗迷搖樂團，擔任聲音合成與氣氛製造。 想與團員嘗試，硬體與軟體交替無限制的聲音碰撞，自製樂器與控制器，發現與掌握各類元素運用。

HACKTERIA 駭生物教學

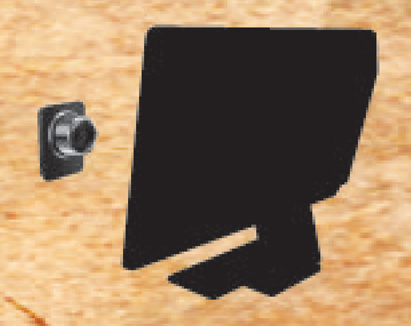
playaround workshop

準備一個webcam

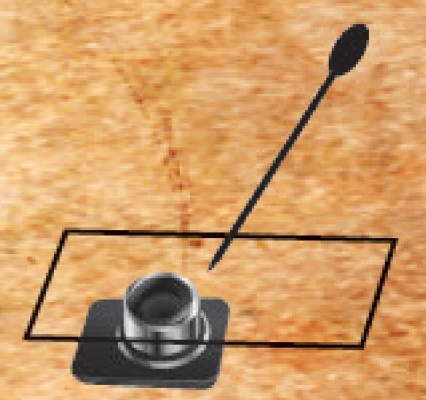
取出鏡頭

加長鏡頭改變焦距

藉由貼近螢幕色像清晰與否調整焦距



蓋上載玻片,滴上微生物即可進行觀察

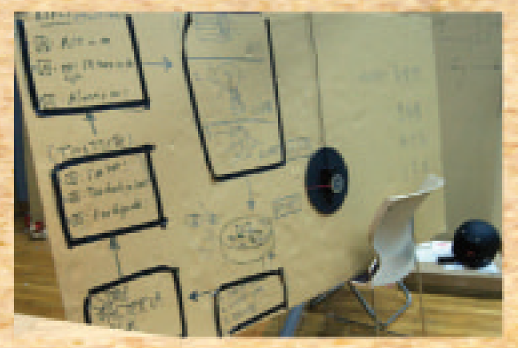


PLAYAROUND WORKSHOP TAIPEI TAIWAN
TA / HACKTERIA

ART WORKS 作品介紹

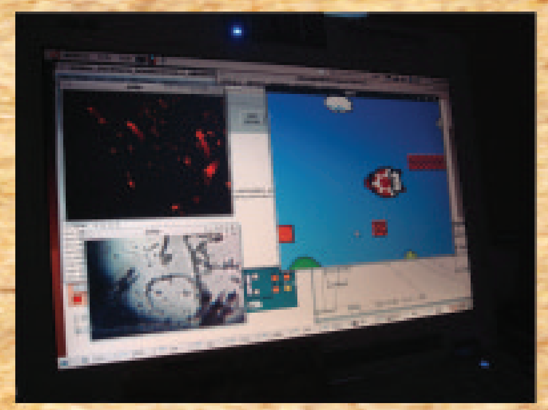

組別：WWWW
成員：ANDY (A組)+ 王文瑜 (E組)+ 胡一之 (E組)+ 吳唯祥 (E組) +史美芹 (E組)
形式：聲音表演
長度：15分鐘
作品說明：音景堆疊
設備：PA system、2支麥克風、Arduino、2~4片可變彎曲電阻、可搬動的桌子椅子


組別：PLUS886
組員:吳佩穎、謝庭茵、游宣倍、黃曉雅、鄭依仲、簡上允
主題:觸聲，觸身 (Touch Sound)
作品說明：本組作品主要是探討：透過"觸"的概念，結合互動科技，來體現在一般人美感經驗之外的表徵。一般經驗中的觸碰"Touch"可能表面上不會有太多現象，但在人的心理狀態及感覺上卻會產
生變化。在此作品中，即試圖將所謂的"內在變化"與外在現象產生連結。作品可能以表演、文件等形式呈現。
設備：投影機、喇叭X2、銅片、瓦楞紙、lilypad、燈控設備

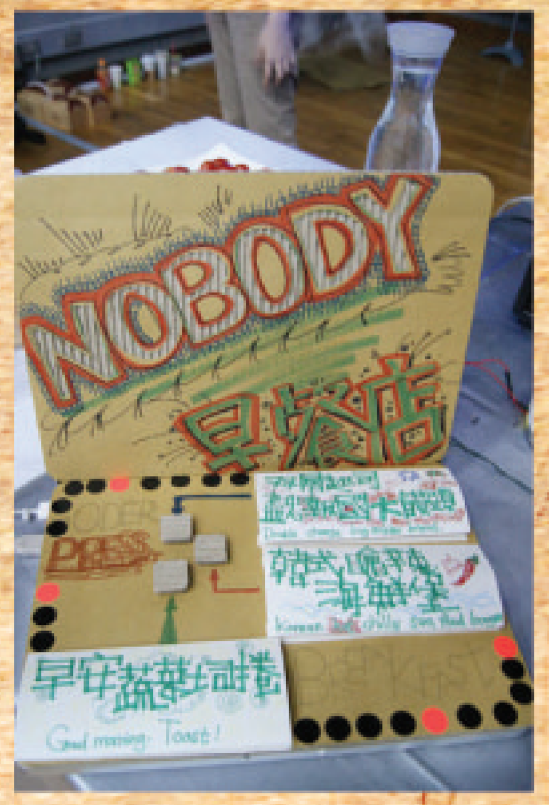



組別：BIOLAB
成員：黃偉傑 曾雨聲 林佳諭 王姿雅
Kit Wong, Bright Tzeng, Afra Lin, Tszya Wong
作品說明：微生物會感受, 會發言, 會行動, 不只是依附性生物, 他們有自成一格的世界.微生物經由顯微鏡和程式、網路,在twitter上發言。
過程：1.追蹤顯微鏡下的微生物運動軌跡 2.改變生物實際存在環境（ex.溫度.光線）3.運動軌跡改變 4.改變程式參數 5.微生物在twitter上說話(文字重組) 6.影響程式參數控制硬體設備 7. 改變原生物實際存在環境（ex.溫度.光線） ...再回到步驟一, 成一循環
創作工具：
- Pure Data
- Hacked Webcam
- Microorganism
- Processing
- Flash
設備：
- 投影機 x 1
- 筆記型電腦 x 1 (OSX x1)
- 喇叭 x 1組
- LED
- 風扇

組別：又遠又近的
組員：陳惠娟/圓圓
作品說明：這是一個使用pd撰寫的音樂。當在意的人在無法見面的遠方時，我們會想念他。想念會勾起回憶，而回憶會將大腦變成放映機，名喚大腦的放映機會不斷播放自己與被想念者相處時的點點滴滴，於是大腦的主人將會進入一種恍惚的狀態。當處於這樣的狀態時，來自外在的聲音及影像將不再是那麼的清晰， 也可以說，是因為回憶的場景與自己所處的環境交融在一起，想像與現實黏稠地包覆自己的感官，一切變得模糊不清。因為思念的關係，一切變得模糊不清。當我處於這種狀態時，腦海中總會出現相同的旋律，我將自己在思念恍惚時所產生的聲音 透過pure data從精神世界變成現實的聲音。這首曲子將獻給摯友ida，希望妳早日康復並穿上比基尼在海灘奔跑。
設備：有電的插座、喇叭、投影機




組別：AVATAR
成員：王新仁、李亦凡、沈聖博、陳皖嘉、黃聖傑、鄭明郡、戴秀穎
Title：AVATAR
Team members：Wang, Kicko、Lee, Evan、Shen, Sheng-Po、Chen, Diane、Huang, Sheng-Chieh、Cheng, Ming-Chun、Dai, Showyin
作品說明：每個載玻片代表一個遊戲卡匣 (例如：超級馬利、小精靈、坦克大戰)
每種微生物都代表遊戲中的一種虛擬身分(avatar) (例如：馬利歐、小精靈、坦克).
當微生物相遇時他們會發生遊戲中的事件 (例如：馬利歐吃到香菇會長大、小精靈被魔鬼碰到會死掉...)
(PS. 最後只做出一個遊戲卡匣:超級馬利)
Idea:
Every slide stands for a game cartridge. (e.g., Super Mario Brothers、Pac-Man、Battle City)
Every microorganism stands for an avatar in the game. (e.g., Mario、Pacman、Tank)
When microorganisms meet up, the event of video game will be triggered. (e.g., Mario will grow up when he get mushroom、Pacman will die when he touch the ghost)
(P.S. At the final stage of workshop, only Super Mario Brothers is implemented.)
方式：
將載玻片(卡匣)放在顯微鏡上(hacked-webcam as microscope),
然後觀察每個微生物所代表的avatar,
看看會發生什麼事
Method：
Just put slide (game cartridge) under our microscope made by hacked webcam, and then watch every microorganism (also its avatar) and wait for something happened.
創作工具：
- Pure Data
- hacked-webcam
- microorganism
Tools：
- Pure Data
- hacked-webcam
- microorganism
設備：
- 投影機 x 1
- 筆記型電腦 x 2 (ubuntu x1, OSX x1)
- 喇叭 x 1組
Equipment：
- beamer x 1
- notebook x 2 (ubuntu x1, OSX x1)
- speaker x 1set

組別：NOBODY
成員：劉正雅（小雅），趙家佑（柚子），陳慧真（真真），蔡宛伶, 翁詩涵（Zoe）,林佳潔（橘子）
形式：.....
長度：.....
名稱：nobody
說明：nobody早餐店

組別：MULTIDANCE
成員：林旺廷(Andy) A組 + 王甄淳(Louise Wang) D組 + 詹嘉華 (Dudu)c組 + 陳冠帆 李聖為 b組
形式：跨領域表演
長度：5'
名稱：X'mas
說明：將感應器連接在襪子上，透過震動、拍打輸出數值訊號到PD產生數位聲音
設備：投影機、webcam、sensor、NB、Arduino

組別：STAR
組員：羅沛晴(B.電子身體)、陳妍君(C.體感電訊)、沈佩君(C.體感電訊)、詹依陵(D.駭生物)、王侯仁茵(E.我聽故我在)、王應凱E.我聽故我在)
作品名稱：To The New World
作品形式：互動裝置
作品說明：作品搭建成走道形式，並於其中設置紅外線感應，可使佈置於天花板上的LED亮或熄滅，類似星空的閃爍感。
設備：筆電、LED、Auduino、紅外線感應裝置*6、紙板

組別：GREEN CHILLI PEPPER
成員：林佩瑩、張凰鈴
作品說明：【微生物之旅】這些一切肉眼看不到或看不清楚，因而需要借助顯微鏡觀察的微小生物與人類的生產、生活和生存息息相關，常常因過於微小很容易被人忽略，微生物之旅概念希望讓大家去思考這些為生物對地球生命裡重要的一種影響。
視覺呈現：網路寄生這個作品靈感來自微生物適應性強，又容易在較短時間內積聚非常多的個體。以程式方式在視覺上呈現微生物的形狀結合樹狀的裝置表達生命與樹之間的關係，觀感與實體裝置的結合象徵了網路的狀況。
創作工具：
Puredata
Processing
Hacked-webcam
Bacteria
設備：
投影機 x 1
筆記型電腦 x 1 (OSX x1)
喇叭 x 1組
Audio

TECHNOMADS 科技遊民