

Introduction of Department Computer Science & Information Engineering

From the East to the Best

2022.Spring



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~ Our School ~





Located in the Largest and Most Beautiful Campus in Taiwan



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National Dong Hwa University

Excellent Comprehensive University emphasizes both academic research and teaching.

Spirit : Freedom ` Democracy ` Creativity ` Excellence

Value : Continuity ` Innovation ` Diversity °

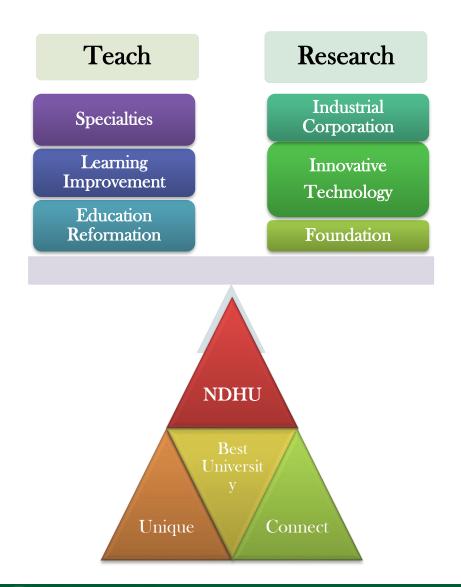
# of Academic Colleges			elor	# of Master Programs	# of Executiv Master Progran	[# of Ph.D. Programs	
8	4		7	43	16		20	
Bachelor	N	laster	Ph.D	Total Students	Faculty	R	atio	Staff
7,800+	1	,400+	420+	10,200+	450+ (99% PhD)	22.6	5:1.0	330+

Status As 2021.12.15

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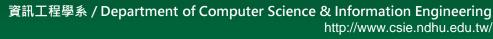


NDHU Prospect



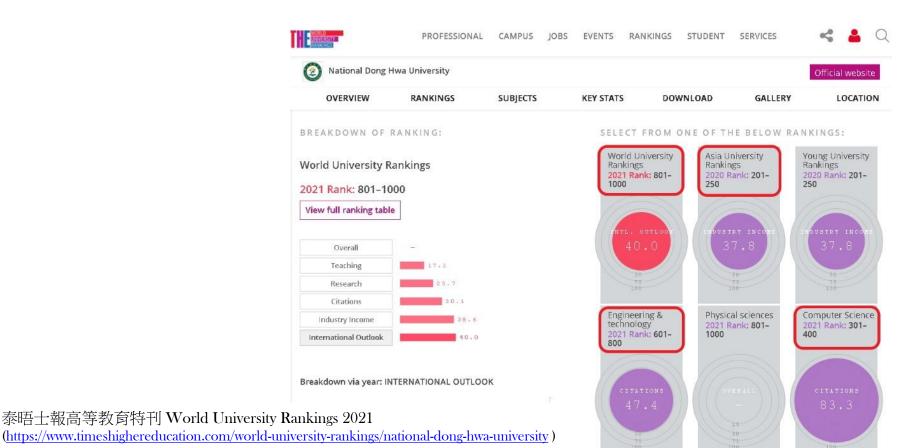
- Excellent comprehensive University
- Emphasizing both academic research and teaching
- Strengthening faculty members' specialties
- Enriching learning depth and scope
- Incubating competent, responsible, and successful leaders of the future society
- Developing unique regional features by integrating natural resources and cultural heritage
- Connecting with international academy; recruiting first-class students and scholars worldwide
- Best University in Taiwan

Our School Page6



NDHU - Times Higher Education World University Ranking 2021

NDHU ranks 10th in Taiwan, 201th in Asia, 801~1000th in the World



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Dept of CSIE ranks 301~400th (Taiwan 5th) in Computer Science subject in 2021 THE World Ranking of Academic Performance.



World University Rankings 2021 by subject: computer science

Rank 🌲	Name Country/Region	Overall 4b	Citations	Industry Income	International Outlook	Research	eaching	2	2021 考	時	士世界	大	學分	分科排	名【電	腦科	學】	臺灣		
	National Taiwan	NO.	Clt	Ind	- Mino Mino	Re	Tea	學校名稱	2021	2021	2020	2020	升降	0	Citations	Industry Income	International Ooutlook	Research	Teaching	Score
62	University (NTU)	61.4	41.1	60.1	31.3	74.0	75.3	学仪石件	世界	臺灣	世界	臺灣	丌唯	Overall	27.5%	5.00%	7.50%	30%	30%	
02	Explore	U.I.		0011	5115	7.110	1515					_	_							1
	Lapiore							國立臺灣大學	62	1	67	1	0	61.4	41.1	60.1	31.3	74	75.3	61.4
101-	National Chiao Tung	49.9-						國立交通大學	101-125	2	176-200	4	2	49.9-53.2	38.6	51.4	25	61	55.1	49.9
125	University [®] Taiwan	53.2	38.6	51.4	25.0	61.0	55.1	國立清華大學	151-175	3	126-150	2	-1	45.5-47.5	38.3	56.2	27.8	55.7	49.2	46.9
125	* Laiwari							國立臺灣科技大學	201-250	4	151-175	3	-1	40 1-43 2	62.3	48.4	29.8	35.2	33.9	42.5
151-	National Tsing Hua University	45.5-	38.3	56.2	27.8	55.7	49.2	國立東華大學	301-400	5	401-500	6	1	33.9–37.8	83.3	44.6	39	16.5	14.7	37.4
175	♥ Taiwan	47.5	50.5	50.2	27.0	55.7	47.2	國立成功大學	301-400	6	301-400	5	-1	33.9–37.8	21.5	52.8	19	42.7	46.9	36.9
								國立臺灣師範大學	301-400	7	401-500	7	0	33.9-37.8	48.4	48.7	26.6	28.9	27.7	34.7
	National Taiwan University of Science							國立中山大學	301-400	8	401-500	8	0	33.9-37.8	40.8	46.4	24.1	31.9	31.6	34.4
201-	and Technology (Taiwan Tech)	40.1-	62.3	48.4	29.8	35.2	33.9	國立中央大學	501-600	9	501-600	9	0	25.7-29.7	27.4	55	22.3	24.8	30	28.4
250	♥Taiwan	43.2	02.5	40.4	29.0	53.Z	55.9	亞洲大學	501-600	10	501-600	10	0	25.7-29.7	27.1	73.9	30.3	25.9	23.8	28.3
	National Dong Hwa							逢甲大學	501-600	11	601+	12	1	25.7-29.7	34.6	45.5	30.9	19.1	20.7	26
301-	University	33.9-						國立中正大學	601-800	12	501-600	11	-1	15.1-25.6	33.8	44.9	16.1	18.8	18.2	23.8
400		37.8	83.3	44.6	39.0	16.5	14.7	國立政治大學	601-800	13	601+	13	0	15.1-25.6	28.5	44.8	19.1	20.3	19.7	23.5
	Explore							國立中興大學	601-800	14	601+	14	0	15.1-25.6	29.8	45.4	20.4	15.8	22.4	23.5
201	National Cheng Kung University (NCKU)							中原大學	601-800	15	601+	15	0	15.1-25.6	24.4	45.2	24.7	20.8	12.4	20.8
301- 400	♥ Taiwan	33.9- 37.8	21.5	52.8	19.0	42.7	46.9	淡江大學	601-800	16	601+	16	0	15.1-25.6	12.1	44.5	20.6	22	21.9	20.3
400	Explore							元智大學	601-800	17	601+	17	0	15.1-25.6	22	48	24.8	9.9	12.8	17.1
301-	National Sun Yat-Sen	33.9-						長庚大學	601-800	18	601+	18	0	15.1-25.6	25.3	47.3	16.9	14.7	12.9	18.9
400	University ♥⊤aiwan	37.8	40.8	46.4	24.1	31.9	31.6	朝陽科技大學	601-800	19	601+	19	0	15.1-25.6	13.9	45	18.8	16.4	17.2	17.6
								國立高雄大學	601-800	20	601+	20	0	15.1-25.6	15.6	45.2	25.5	11.3	11.7	15.4
301-	National Taiwan Normal University ® Taiwan	33.9-	48.4	48.7	26.6	28.9	27.7													

400 ^{®Taiwan}

2)

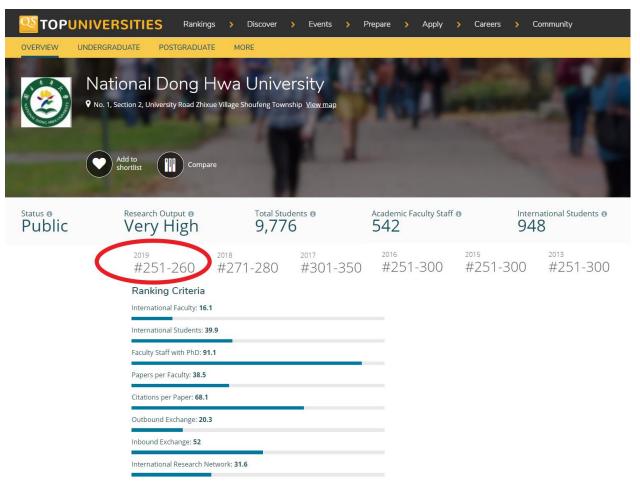
37.8

48.4 48.7 26.6 28.9 27.7

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NDHU - QS Asian University Rankings

• NDHU ranks #251~260th in Asia



QS Top Universities - Asian University Rankings (亞洲 #251~260)

(https://www.topuniversities.com/universities/national-dong-hwa-university)

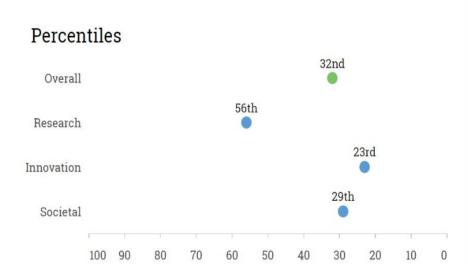
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NDHU-SCImago ranking

National Dong Hwa University 📀

Taiwan





https://www.scimagoir.com/institution.php?idp=1743

Our School Page10

Internationalized Campus

- Cooperate and Exchange agreement with > 445 universities around the world, including Asia, Europe, North America, Africa...
- Bachelor, Master, and Ph.D Programs Taught in English
- Scholarships for International students
- Free fundamental Chinese classes
- Bilingual Staff to assist students







International Students on campus

	2016-17 School Year	2017-18 School Year	2018-19 School Year	2019-20 School Year	2020-21 School Year
International	271	269	338	389	389
Exchange	348	137	130	179	((due covid-19)
Oversea Chinese	397	436	428	430	389
Chinese Language		54	54	89	6 (due covid-19)
Total	1016	896	950	1087	784

In-status student counts as of 2021.03.05. Students graduate each year.

Note: 2020-21 was affected by Covid-19 pandemic disease worldwide.

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Low Cost for Higher Education

2022 [~] 2023 Estimate	d Expenses to Stud	(Master & Ph.D.)					
	NTD/semester	NTD/year	USD/year	NTD/semester	NTD/year	USD/year	
	Personal Expense	Personal Expenses					
Dormitory Fee	10,700 NTD	21,400 NTD	713 USD	10,700 NTD	21,400 NTD	713 USD	
Dormitory Deposit	1,000 NTD	2,000 NTD	67 USD	1,000 NTD	2,000 NTD	67 USD	
Book/Supplies	10,000 NTD	20,000 NTD	670 USD	10,000 NTD	20,000 NTD	670 USD	
Living Costs Food, transportation etc.	36,000 NTD	72,000 NTD	2,400 USD	36,000 NTD	72,000 NTD	2,400 USD	
Student insurance fee,etc	5,000 NTD	10,000 NTD	333 USD	5,000 NTD	10,000 NTD	333 USD	
Total Personal Expenses	62,700 NTD	125,400 NTD	4,180 USD	62,700 NTD	125,400 NTD	4,180 USD	
Tuition	fees and Miscellar	neous fees		Tuition Fees and Credit Fees			
College of Science and	55 590 NTTD	111 160 NTD	9.750 1190	25,800 NTD	51,600 NTD	1,720 USD	
Engineering	55,580 NTD	111,160 NTD	3,750 USD	3,060/credit	3,060/credit	102 USD /credit	
	Total Expenses				Total Expenses		
Total Estimated Expenses	118,280	236,560	7,930	88,500 +(3,060*credit)	177,000 +(3,060*credit)	5,900 +(102*credits)	
	NTD	NTD	USD	NTD	NTD	USD	

NTD = New Taiwanese Dollar, USD = U.S. Dollar

First-year students should anticipate additional expenses to settle down.

(e.g. computer, bed sheet, pillowcase, etc.)

The above amounts are estimated and will be affected by choice of living style and personal needs.





Financial Aid / Scholarship

	National Dong Hwa University	Other Organizations			
Scholarship	Description	Scholarship	Description		
NDHU International Student Scholarship	Tuition 50% ~ 100% Waiver Top Bachelor Students Stipend: NT\$20,000 / semester Top Master's and Doctoral Students Stipend: NT\$30,000 / semester	Vest 500 Project	Tuition Waiver Stipend Insurance Fee Paid Round-trip Economy-class Ticket (Vietnamese only)		
NDHU Southward Scholarship	Doctoral Students Only Tuition 100% Waiver – not include accommodation and other expenses (not including agency, insurance, and Internet fees) Stipend: NT\$6,000/ month Research Incentive: NT\$8,000/ month	Mekong 1000 Project	Tuition Waiver Stipend Round-trip Economy-class Ticket (Vietnamese only)		
	Taiwan Government Agencies	Danang Project	Tuition Waiver Stipend		
Scholarship	Description		Insurance Fee Paid Round-trip Economy-class Ticket		
	Taiwan International Cooperation and Development Fund (TaiwanICDF for CSIE major only) 100% Tuition and Fee Waiver 100% Dorm Room and Insurance paid Bachelor Stipend: NT\$12,000 / month	Southern Sunshine Scholarship (SSS) Project	Tuition Waiver Stipend		
Taiwan Scholarship	Ministry of Foreign Affairs (MOFA) Tuition 50% Waiver Stipend: NT\$30,000 / month	BUDI Project	Tuition Waiver Stipend Insurance Fee & Book Fee paid (Indonesian only)		
	Ministry of Education (MOE) Tuition 100% Waiver Bachelor Stipend: NT\$15,000 / month Master's and Doctoral Stipend: NT\$20,000 / month	Thai Elite 600 Project	Tuition Waiver Stipend Insurance Fee paid Round-trip Economy-class Ticket (Thai only)		

NDHU Financial Aid Application: https://oia.ndhu.edu.tw/intl-student/intl-scholarship/intl-scholarship-informationOur Study in Dept of CSIE Page14



NDHU E-Learning Environment

Academic Network Hub Center of Taiwan

Complete E-Learning Environment

ex: Long-Distance Learning classroom, Multimedia classroom, e-learning platform, e-systems...etc.

Fully covered by high-speed internet access 24-hrs including academic buildings, dorm rooms, & sport fields.



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NDHU Library

13,000 sq meter, more than 1,556,000 books (including Western publications)







Reading Room



Display Area



Microfilm Room



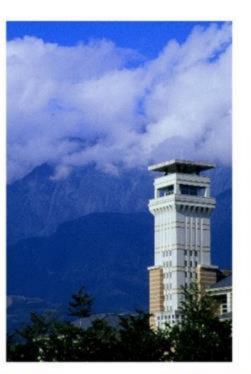
Campus Buildings

Engineering Building (Department Offices of CSIE and Electronic Engineering)



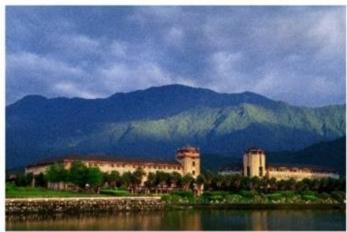
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Campus Buildings







Our School Page18







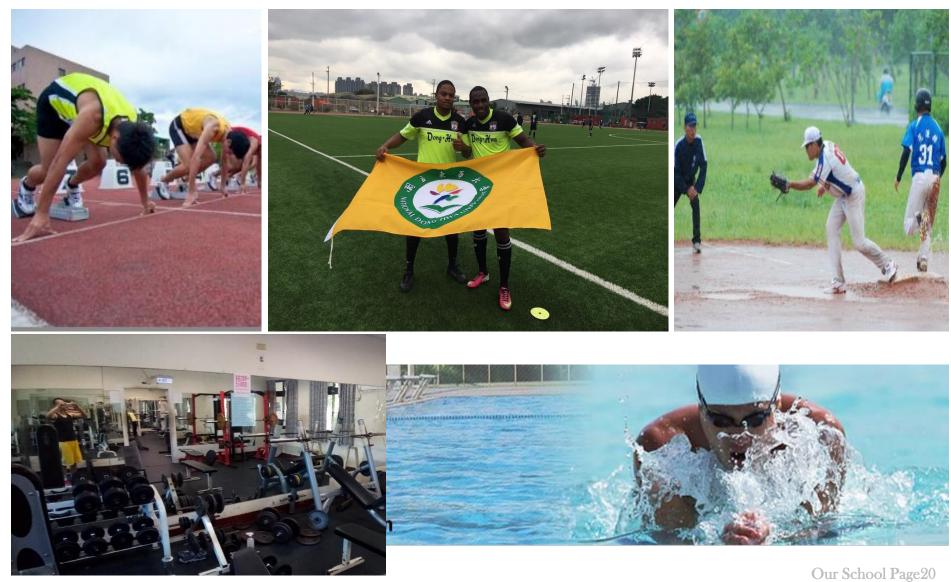
Campus Facility

- Dormitory : 6,000 Air-Conditioned rooms guaranteed for all international students
- Shuttle Bus
- Library & Computer Center
- Bookstore, Cafeteria, Restaurants
- Banks, Postal Office, Coffee Shop
- Rock Climbing Arena
- Cricket Ball, Football, Soccer fields
- Swimming Pool (in and outdoors)
- Kayak, Sailboat
- Basketball, Volleyball, Badminton, Tennis Courts
- Gym, Weight Training, Running TrackBicycle Lanes
- Guest Hotel





Sport Facility



副立束華大學 National Dong Hwa University

~ Our Lives on Campus ~



國互東孕大學

Modern Dormitory & Living Space

- All new 6000 **Air-Conditioned** private rooms with bathroom inside.
- Bright large living space.
- Dormitories are guaranteed for all international students.
- Prayer rooms, Kitchens, Community rooms, Study centers.
- 24-hr Managers and Campus Policemen on duty.
- Campus Shuttle Bus run between campus and downtown every hour.
- Comfortable and Convenient living environment.



Our Lives on Campus Page22



Modern Dormitory (inside)











Our Lives on Campus Page23



Modern Dormitory (Facility)



Our Lives on Campus Page24



Facility - Prayer Room (Mushollah)



Our Lives on Campus Page25



Various Eatery on campus



Lakeside Brunch

NT\$25

(with Salad or Fr Rosemary Grilled Chick fonkatsu (Fried pork) Beef Stew In Red Wine Roasted Pork with Kim Laiwanese Salated Baco Chef's Stewed Pork	ten 烤糙排 日式精排 紅酒牛肉 chi 泡菜踏 n 鹹豬肉 燒肉	NT\$120 NT\$120 NT\$120 NT\$120 NT\$120 NT\$120 NT\$120	(with Salad or Frence) imoked Chicken 初油環題 and Cream Sauce moked Chicken 普茄環題 acon and Petto Sauce 常確 imoked Salmon 労油環動自 and Cream Sauce Vushroom 電石野話 and Tomato Sauce t and NT\$25 Drinks (Fron	NT\$100 NT\$100 NT\$100 NT\$100 NT\$100	BLACK TEA Original Black Tea 紅茶 Lemon Black Tea 体態紅 Black Tea with Honey 錄蜜 Milk Tea 奶茶 GREEN TEA Jasmine Green Tea 修業 Lemon Green Tea 修業 Green Tea with Honey 錄編 Green Tea with Honey 錄編
SNACK	s 🎽		BAGEL		OOLONG GREEN TEA
Toast with Jam 薄片		NT\$15	Vegitables and Fruits	NT\$50	Lemon Oolong Green
Thick Toast with Jar	m厚片	NT\$25	(Veggie)蔬果具果		存很乌雅峰
French Fries 著係		NT\$40	Roast Beef 牛肉貝果	NT\$65	Oolong Green 蜂室烏龍絲
Fried Mozzarella #	士條	NT\$50	Smoked Chicken 燻麵貝果	NT\$65	with Honey
Krispy Onion Rings	洋筋密	NT\$50	Ham 火腿貝果	NT\$65	Oolong Green 多多鳥雕绿
Smoked Chicken Bu	urrito 驟肉接	NT\$90			with Yakult
Beef Burrito 牛肉搏		NT\$90			
Fried Three-For-All	综合炸物	NT\$120	FOCACCIA	Carlo	
				Cale .	FRESH MILK TEA
SANDWI	сн 🚬		Vegetables and Fruits	NT\$50	Black Milk Tea 紅茶拿鐵
Mashed Potato (Ve			(Veggie)综合蔬果		Oolong Milk Tea 烏龍寨讓
Beef 4 th	BBre MB %E	NT\$50	Roast Beef 牛肉	NT\$65	Green Milk Tea 绿茶本鐵
Egg and Pork 内蛋		NT\$65	Smoked Chicken 燻雞	NT\$65	Oolong Green Milk Tea
	0440	NT\$65	Ham 火腿佛卡夏	NT\$65	烏龍絲拿鐵
Fried Chicken shrint		NT\$65	Bacon 培根佛卡夏	NT\$65	Cocoa गुग
Fried Chicken 卡啦			1		
Fried Chicken 卡拉 Tuna and Corn 前命	t.	NT\$65	1		
		N1565	1	/	OOLONG TEA
		N1565	1	_	
		NI\$65	- F# N	T\$45	Original Oolong 烏龍
	Korean Por	nelo Tea 柚子		T\$45 T\$45	Original Oolong 馬龍 Oolong with Honey 蜂蜜岛
Tuna and Corn 前面	Korean Por	nelo Tea 柚子	Sugar 黑糖薹茶 N		



Our Lives on Campus Page26



Transportation on campus





Shuttle buses run between NDHU campus to DownTown Hualien City





Street shops nearby

Train station next to NDHU Campus Our Lives on Campus Page27



Chinese Class for Int'l Students



Please click image to hear their stories

大自然 感覺很輕鬆 The nature in here is very relaxing

Our Study in Dept of CSIE Page28

Multivariate Courses to explore



Rock Climbing, Diving, Whale Watching
Marine Center, TV studio \$ 3D Print \$ Maker Space





Multivariate Courses to explore



Independent Research, In-Door SportsRock Climbing, Wind Surfing, Kayaking on campus





Student's Entertainment



Night Market

Concert Festival





Movie Theater / KTV

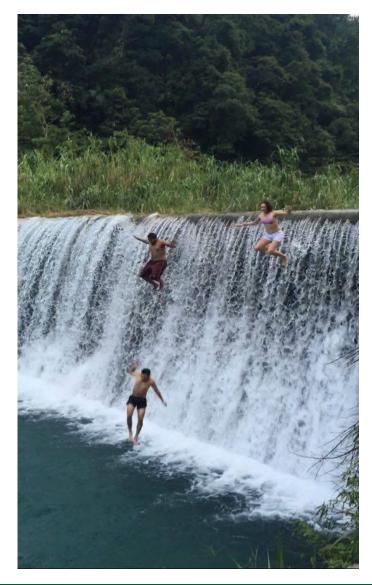


Ocean Beach

Our Lives on Campus Page31



Student's Entertainment





River Trackin, Natural Wonder



Our Lives on Campus Page32



Student's Entertainment

Hiking
 Kayak
 River Tracking
 Natural Wonder



國主東華大學 National Dong Hwa University

Our Study in Dept of CSIE
Computer Science &
Information Engineering



Why CSIE ?

- AI & Deep Learning \in **CSIE**
- Cloud Computing & Big Data \in **CSIE**
- Social Networks & Media \in **CSIE**
- Digital Graphics, Animation & Games \in **CSIE**
- Internet & WWW \in **CSIE**
- APPs & Mobile Services \in **CSIE**

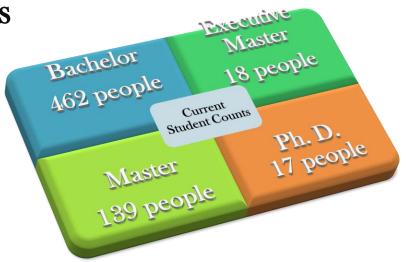
- Better job, Better life, Better world with CSIE
- Study CSIE is the great investment !!

Our Study in Dept of CSIE Page35



Department of Computer Science & Information Engineering

- Most comprehensive programs
 - Bachelor
 - International Bachelor
 - Master
 - International Master
 - Executive Master
 - Ph.D.



- ✓ Dept of CSIE 300-400th (Taiwan 5th) in Computer Science subject in 2021 World Ranking of Academic Performance.
- \checkmark Outstanding and Remarkable research opportunities and performances.
- ✓ Supportive faculty and excellent learning environment definitely advance your career.

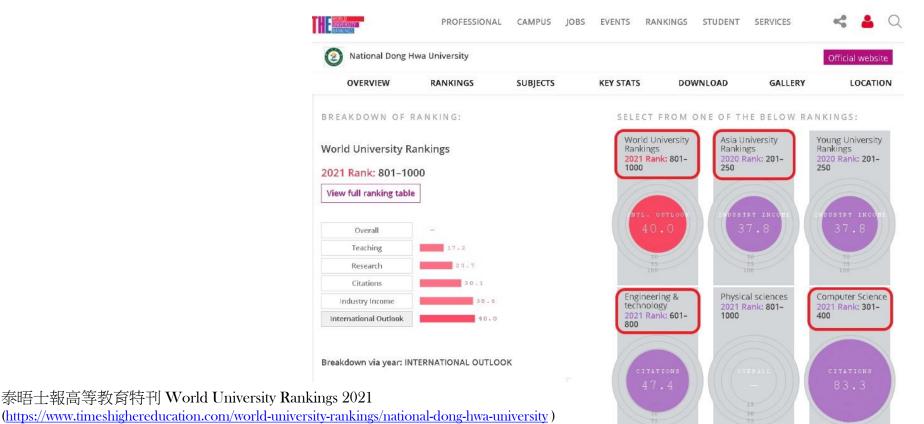
In-status student counts as of 2021.10.31.

Our Study in Dept of CSIE Page36



CSIE - World Ranking 2021

NDHU ranks 10th in Taiwan, 201th in Asia, 801^{~1000th} in the World Dept. of CSIE ranks 5th in Taiwan, 301^{~400th} in the World



Our Study in Dept of CSIE Page37



Dept of CSIE ranks 301~400th (Taiwan 5th) in Computer Science subject

in 2021 THE World Ranking of Academic Performance.

UNIVERSITY

400

World University Rankings 2021 by subject: computer science

Rank 🌲	Name Country/Region	rerall	Citations +	Industry Income	International Outlook ()	Research	Teaching	2021 泰晤士世界大學分科排名【電腦科學】 臺灣												
		Ove	Cita	Indu	Outl			學校名稱	2021	2021	2020	2020	升降	e Overall	Citations	Industry Income	International Ooutlook	Research	Teaching	Score
62	National FaiWan University (NTU) ®Taiwan Explore		41.1	60.1					世界	臺灣	世界	臺灣	JT P∉		27.5%	5.00%	7.50%	30%	30%	
		61.4			31.3	74.0	75.3													1
								國立臺灣大學	62	1	67	1	0	61.4	41.1	60.1	31.3	74	75.3	61.4
								國立交通大學	101-125	2	176-200	4	2	49.9-53.2	38.6	51.4	25	61	55.1	49.9
101– 125	National Chiao Tung University 🕅 Taiwan	49.9- 53.2	38.6	51.4	25.0	61.0	55.1	國立清華大學	151-175	3	126-150	2	-1	45.5-47.5	38.3	56.2	27.8	55.7	49.2	46.9
								國立臺灣科技大學	201-250	4	151-175	3	-1	40.1-43.2	62.3	48.4	29.8	35.2	33.9	42.5
								國立東華大學	301-400	5	401-500	6	1	33.9-37.8	83.3	44.6	39	16.5	14.7	37.4
151– 175	National Tsing Hua University ®Taiwan	45.5- 47.5	38.3	56.2	27.8	55.7	49.2	國卫成切大學	301-400	6	301-400	5	-1	33.9–37.8	21.5	52.8	19	42.7	46.9	36.9
							· T / 1 &	國立臺灣師範大學	301-400	7	401-500	7	0	33.9-37.8	48.4	48.7	26.6	28.9	27.7	34.7
201- 250	National Taiwan University of Science and Technology (Taiwan Tech) 9 Taiwan							國立中山大學	301-400	8	401-500	8	0	33.9-37.8	40.8	46.4	24.1	31.9	31.6	34.4
				48.4	29.8	35.2		國立中央大學	501-600	9	501-600	9	0	25.7-29.7	27.4	55	22.3	24.8	30	28.4
		40.1-	62.3				33.9	亞洲大學	501-600	10	501-600	10	0	25.7-29.7	27.1	73.9	30.3	25.9	23.8	28.3
		43.2						逢甲大學	501-600	11	601+	12	1	25.7-29.7	34.6	45.5	30.9	19.1	20.7	26
301- 400								國立中正大學	601-800	12	501-600	11	-1	15.1-25.6	33.8	44.9	16.1	18.8	18.2	23.8
	National Dong Hwa University ® Taiwan Explore	33.9- 37.8	83.3	44.6	39.0	16.5	- 1	國立政治大學	601-800	13	601+	13	0	15.1-25.6	28.5	44.8	19.1	20.3	19.7	23.5
							14.7	國立中興大學	601-800	14	601+	14	0	15.1-25.6	29.8	45.4	20.4	15.8	22.4	23.5
								中原大學	601-800	15	601+	15	0	15.1-25.6	24.4	45.2	24.7	20.8	12.4	20.8
301- 400	National Cheng Kung							淡江大學	601-800	16	601+	16	0	15.1-25.6	12.1	44.5	20.6	22	21.9	20.3
	University (NCKU) [®] Taiwan	33.9-	21.5	52.8	19.0	42.7	46.9	元智大學	601-800	17	601+	17	0	15.1-25.6	22	48	24.8	9.9	12.8	17.1
		37.8						長庚大學	601-800	18	601+	18	0	15.1-25.6	25.3	47.3	16.9	14.7	12.9	18.9
	Explore							朝陽科技大學	601-800	19	601+	19	0	15.1-25.6	13.9	45	18.8	16.4	17.2	17.6
301-	National Sun Yat-Sen	33.9-	40.5	46.4		21.0		國立高雄大學	601-800	20	601+	20	0	15.1-25.6	15.6	45.2	25.5	11.3	11.7	15.4
400	University ♥Taiwan	37.8	40.8	46.4	24.1	31.9	31.6													

National Taiwan Normal University 301-33.9-48.4 **♥**Taiwan 37.8

48.7

26.6

27.7

289

Our Study in Dept of CSIE Page38

Excellent Faculty Team





Our Study in Dept of CSIE Page39



Excellent Faculty Team

 \checkmark 20 full-time professors, all with Ph.D. degrees.

- \checkmark 13 professors (> 65%) used to work in the industry.
- ✓ 15 among them were awarded national or international honors: \mathbf{IET}

Fellow of Institute of Engineering & Technology,

Chess Championship of Computer Olympiad,

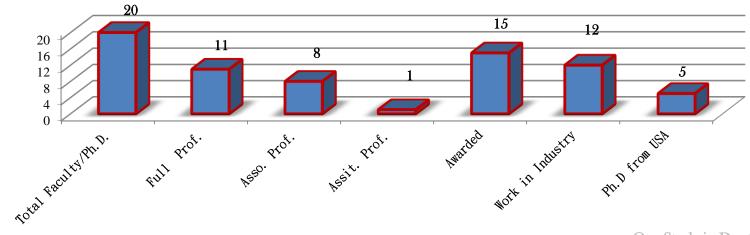
Gold Prize Award for "Ideas-Inventions-New Products" (IENA),

Best IICM Master / PhD Thesis Award,

Top Scholar of Journal of System & Software,

Gold Prize for 4C Digital Design Contest,

Excellent Scholar on National Science Council projects



Our Study in Dept of CSIE Page40

Diversified Researches

- 1. Artificial Intelligence & Learning Machine
- 2. Cloud Computing & Big-Data Processing
- 3. Computer Vision and Virtual Reality
- 4. Computing Theories and Algorithms
- 5. Cryptography and Information Security
- 6. Data and Knowledge Base Systems
- 7. Digital Image and Vision Computation
- 8. Decision Support Systems
- 9. Computer Networks and Distributed Systems
- 10. Human-Machine Interaction Systems
- 11. Mobile & Pervasive Computing
- 12. Multimedia Systems
- 13. Parallel & Distributed Computing
- 14. Programming Languages and Compiler Systems
- 15. Software Engineering
- 16. VLSI Circuit & Embedded Systems Design



Our Professors with IET Fellow honor



Prof. David Shin-Feng Lin Signal/Image Processing, Image/Video Compression



Prof. Ching-Nung Yang Information and Network Security Cryptography Coding Theory

Our Study in Dept of CSIE Page42



Our Professors named as Top 2% Scientists of World



PROF. C.N.YANG & PROF. J.R HUANG NAMED STANFORD UNIV.

WORLD TOP 2% SCIENTISTS

M NDHUCSIE

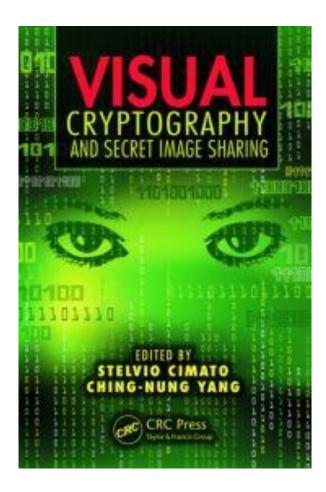


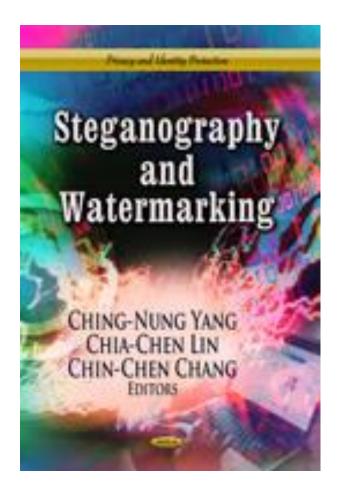
Prof.Ching-Nung Yang Information and Network Security Cryptography Coding Theory Prof. Chenn-Jung Huang Machine Learning, Wireless Network, Intelligent Systems, E-Learning

Our Study in Dept of CSIE Page43



English Textbook written by our professors

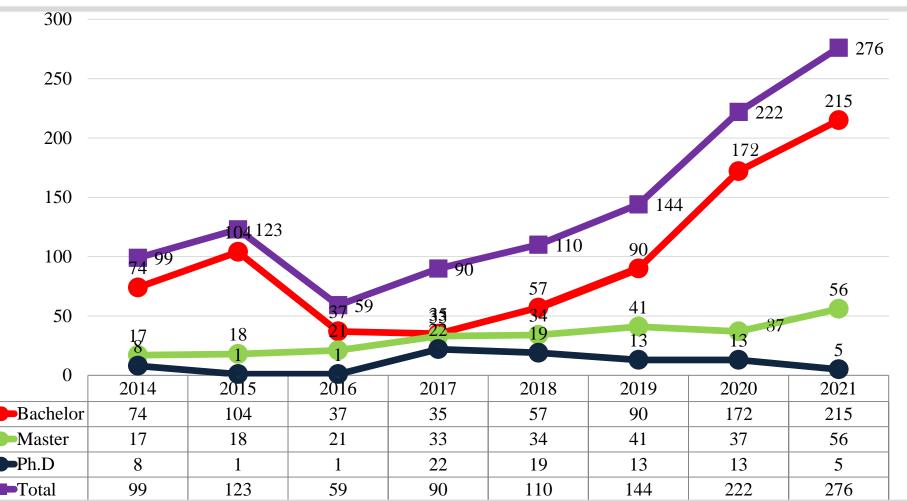




Our Study in Dept of CSIE Page44



CSIE - Internationalized Department

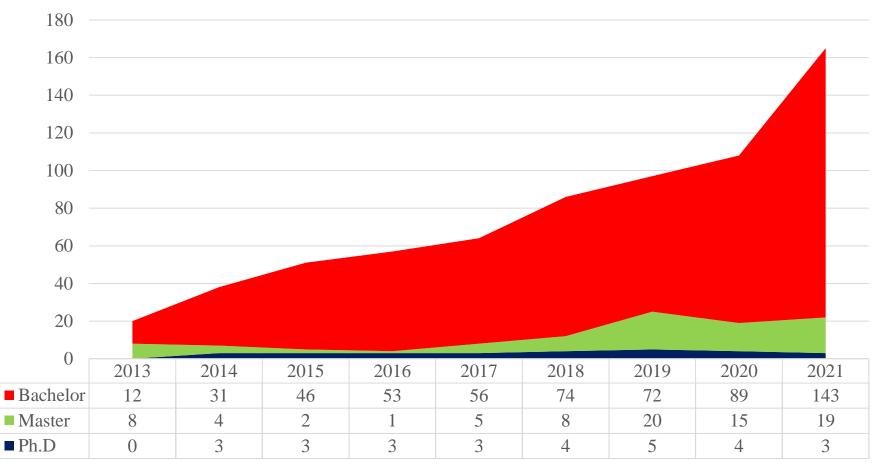


CSIE International Admission Applications of each academic year

Our Study in Dept of CSIE Page45



CSIE - Internationalized Department



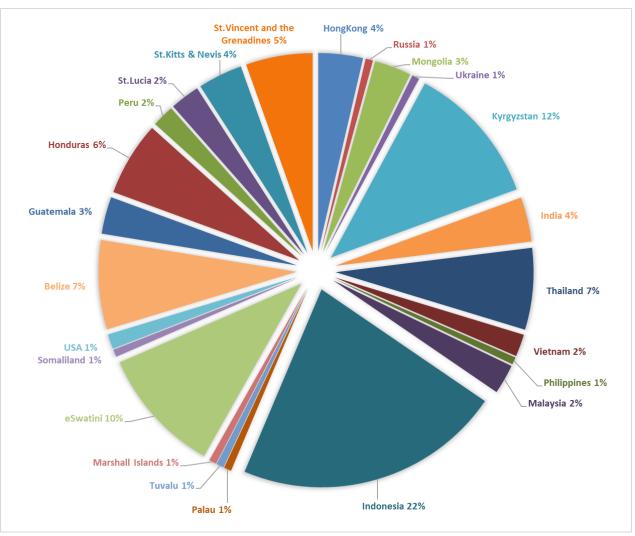
■ Ph.D ■ Master ■ Bachelor

CSIE International In-Status Students of each academic year

Our Study in Dept of CSIE Page46



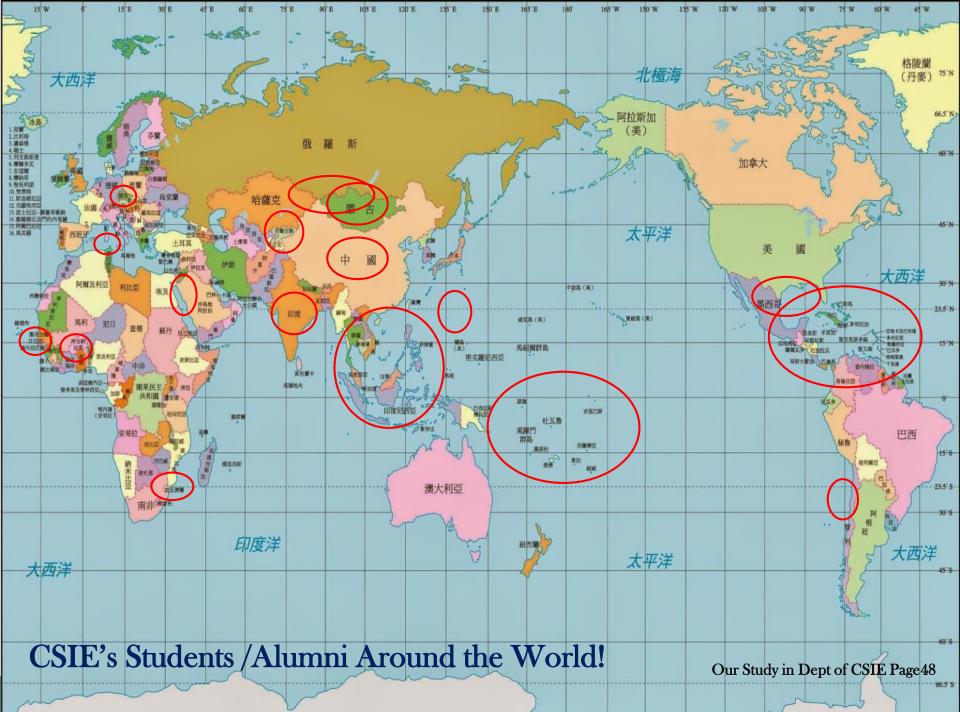
✓ CSIE's Students come from Around the World!



In-status student counts as of 2021.10.31.

Our Study in Dept of CSIE Page47





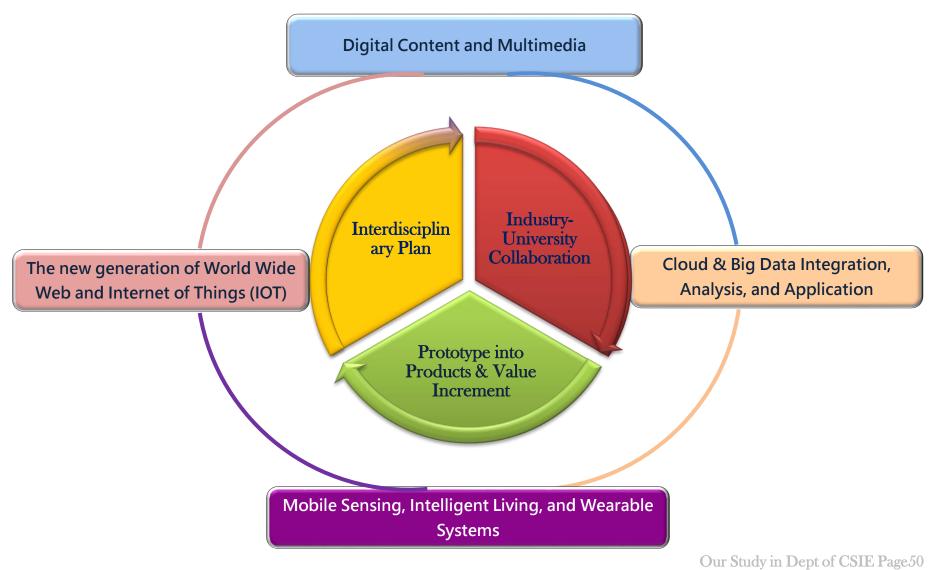
Cooperation Projects with Partner Universities



Our Study in Dept of CSIE Page49



Research priorities for the next five years





Operational Priorities for the next 10 years

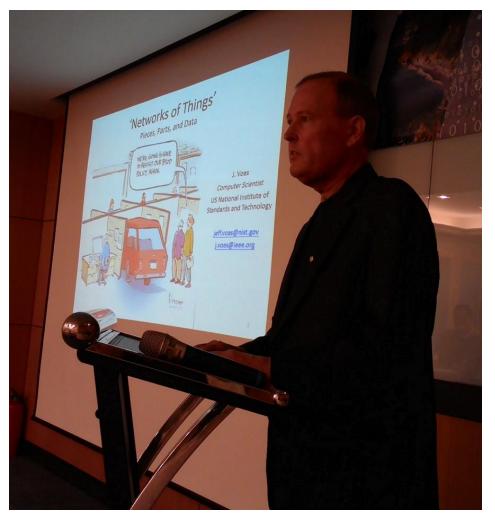
SUSTAINABLE G ALS







International Cooperation of CSIE Academic Involvement



Lecture Seminar

of Next-Generation Workloads

pelines ion Intensive ositions per second ges per second) -Time Requirements ds for Higher Performance

n Battery-Powe limited energy l e Toppins of I for Low H

Our Study in Dept of CSIE Page52

400



International Cooperation of CSIE

- Academic Involvement
- MOU with Sister Universities
- Research Corporations
- Transnational Cultural Studies
- Host International Conference or Attend oversea
- Faculty Exchanges
- Student Exchanges
- English-Taught Degree Programs for International Students



Our Research Lab in Computer Science & Information Engineering



20 Research Laboratories

- Artificial Intelligence Laboratory
- Cloud Computing & Big Data Processing Server
- Computer Vision and Virtual Reality Laboratory
- Computer Systems Laboratory
- Compiler Technology and Application Laboratory
 Mobile Computing and Knowledge Engineering
- Cryptography and Information Security Laboratory
- Digital Image and Vision Computing Laboratory
- Decision Support Systems Laboratory
- Distributed Computing Laboratory
- Intelligent Systems Laboratory
- Internet Computing and Application Laboratory

- Image and Video Processing Laboratory
- Interconnection Network and Fault Tolerant Computing Laboratory
- Learning Technology Laboratory
- Mobile Computing and Knowledge Engineering Laboratory
- Multimedia Interaction Technology Laboratory
- Network Technology Laboratory
- Pervasive Computing and Data Management Laboratory
- Software Engineering Laboratory
- •Wireless Internet Service Engineering Laboratory



Advanced research equipments Computer Classrooms, Movie Studio, Maker Space













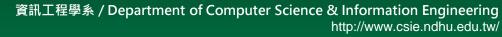














Software System & Application Research Group

Shiow-Yang Wu Professor and Chairman

Education Background: Dept. of Computer Science, University of Texas at Austin, U.S.A. Research Interest: Database and Knowledge Bases, Mobile and Cloud Computing. Distributed Processing, Personalized Service, RFID Data Management Tel: 8634020 Office: 工C308 實驗室:普及計算與資料管理實驗室 (工C321;分機: 4038)

Shi-Jim Yen Professor

Education Background: Dept. of Computer Science and Information Engineering, National Taiwan University, Taiwan Research Interest: Artificial Intelligence, Computer Games, Machine Learning Tel: 8634031 Office: 工C324 實驗室:人工智悲實驗室 (工D303; 分機:4051)

Tao-Ku Chang Assis. Professor

Education Background: Institute of Information and Computer Education. National Taiwan Normal University, Taiwan Research Interest: Information Security, Internet Services, Workflow, Software Engineering Tel: 8634058 Office: 工A310 實驗室: 網路運算與應用實驗室 (工E308:分機: 4005)

Guan-ling Lee Asso. Professor

Education Background: Dept. of Computer Science, National Tsing Hua University, Taiwan Research Interest:

Mobile Computing, Database, Data Mining Tel: 8634030 Office: エC304 實验室: 知識工程實验室 (エA321;分機: 4044)

Han-Ying Kao Asso. Professor

Education Background: Dept. of Information Management, National Chiao Tung University, Taiwan Research Interest: Optimization Methods and Applications, Soft Computing, Intelligent Decisions Tel: 8634059 Office: 工A314 實驗室:決策支援系統實驗室 (工E304;分機:4004)

Shih-Chien Chou Professo

Education Background: Dept. of Computer Science and Information Engineering, National Chiao Tung University, Taiwan Research Interest: Software Engineering, Systems Analysis and Design, Software Development, Object-Oriented Software Tel: 8634024 Office: LC318 實驗室:軟品工程實驗室 (LC323; 分機: 4037)

Our Research Lab Page58





Research Domain

- Big Data and Cloud Computing
- Data and Knowledge Base Systems
- Parallel and Distributed Systems
- RFID Middleware
- Mobile & Pervasive Computing
- E-Commerce Modeling and Workflow Management

Shiow-Yang Wu Professor and Chairman

Education Background: Dept. of Computer Science, University of Texas at Austin, U.S.A. Research Interest: Database and Knowledge Bases, Mobile and Cloud Computing, Distributed Processing, Personalized Service, RFID Data Management Te1: 8634020 Office: 工C308 實驗室:普及計算與資料管理實驗室 (工C321;分機: 4038)





Artificial Intelligence Laboratory

Research Domain

- Artificial Intelligence
- Computer Game
- Machine Learning



Shi-Jim Yen Professor

Education Background: Dept. of Computer Science and Information Engineering, National Taiwan University, Taiwan Research Interest: Artificial Intelligence, Computer Games, Machine Learning Tel: 8634031 Office: 工C324 實驗室:人工智慧實驗室 (工D303; 分機:4051)



IEEE WCCI 2012, June, 9-16, Brisbane, Australia. Human vs. Computer Go Competition Workshop on Emergent Application of Computational Intelligence in Computer Go



2011.11 AI Lab, won 1 Gold, 2 Bronze in Derburg, Holland

Our Research Lab Page60





Research Domain

- Internet Security
 - Security for XML Documents
 - Security for XML-based Database System
 - Security of Web Services
 - Security of Service-Oriented Architecture
- Design and Application of Groupware
 - Object-Oriented Workflow Management Systems
 - Distributed Workflow Management Systems
- Mobile Application
 - Mobile Security

Tao-Ku Chang Assis. Professor

Education Background: Institute of Information and Computer Education, National Taiwan Normal University, Taiwan Research Interest: Information Security, Internet Services, Workflow, Software Engineering Tel: 8634058 Office: 工A310 實驗室:網路運算與應用實驗室 (工E308:分機:4005)



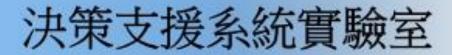




MAKING Lab was established in 2003. The mission of MAKING Lab is to explore all facets in the area of knowledge engineering. The current research focuses on data mining and skyline query processing. The research interests are described as follows:



nd





Decision Support Systems Laboratory

Research Domain

- Fuzzy Optimization and Reasoning
- Multiple Criteria Decision Methods
- Soft computing
- Data mining and Decision Support



Our Research Lab Page63



Research Domain

- Software Engineering
- System Analysis and Design
- Object-Oriented Software Development Software Reuse
- Software Development Process Engineering

Our Research Lab Page64



Shih-Chien Chou Professor

Chiao Tung University, Taiwan

Software Engineering, Systems Analysis and Design, Software Development, Object-Oriented

Te1:8634024 Office:工C318 實驗室:軟品工程實驗室 (工C323;分機:4037)

Education Background: Dept. of Computer Science and Information

Engineering, National

Research Interest:

Software

Multimedia Technology & Applications Research Group

Shin-Feng Lin Professor and Dean of College of Sciences and Engineering

Education Background: Dept. of Electrical Engineering, Mississippi State University, U.S.A.

Research Interest: Signal /Image Processing, Image/ Video Compression, Information Security Tel: 8634018 Office:工A320 實驗室:影像暨視訊處理實驗室 (工A317; 分機:4040)

Mau-Tsuen Yang Asso. Professor

Education Background: Dept. of Computer Science and Engineering, Pennsylvania State University, U.S.A. Research Interest: Computer Vision, Digital Image Processing, Virtual Reality Tel: 8634028 Office: 工C302 實驗室: 電腦視覺暨虛擬實境實驗室 (工C313; 分機:4050)

I-Cheng Chang Asso. Professor

Education Background: Dept. of Electrical Engineering, National Tsing Hua University, Taiwan Research Interest: Image Processing, Computer Vision, Computer Graphics Tel: 8634022 Office: 工C316 實驗室:數位影像與視覺計算實驗室 (工C317; 分機: 4047)

Ching-Nung Yang Professor

Education Background: Dept. of Electrical Engineering, National Cheng Kung University, Taiwan Research Interest: Cryptography, Information and Network Security, Coding Theory Tel: 8634025 Office: 工C314 實驗室:密碼與資訊安全實驗室 (工A309; 分機: 4042)

Cheng-Chin Chiang Professor

Education Background: Dept. of Computer Science and Information Engineering, National Chiao Tung University, Taiwan Research Interest: Neural Network, Image Processing, Pattern Recognition, Intelligent Human-Machine Interface Tol: 8624027, Office: 14222

Tel:8634027 Office:工A322 實驗室:多媒體互動技術實驗室 (工A323;分機:4043)

Chih-Hung Lai Assis. Professor

Education Background: Dept. of Computer Science and Information Engineering, National Central University, Taiwan Research Interest: Digital Learning, Learning Technology, Mobile Learning Tel: 8634057 Office: 工A306 實驗室:學習科技實驗室 (工A423:分機:4003)

Our Research Lab Page65



DEO PROCESSING LABORATORY

Research Domain

- Signal/Image Processing
- Watermarking (Image/Video/Audio)
- Image/Video Compression
- Human Tracking
- Error Concealment in H.264/AVC
- Pattern Recognition
- **Information Security**







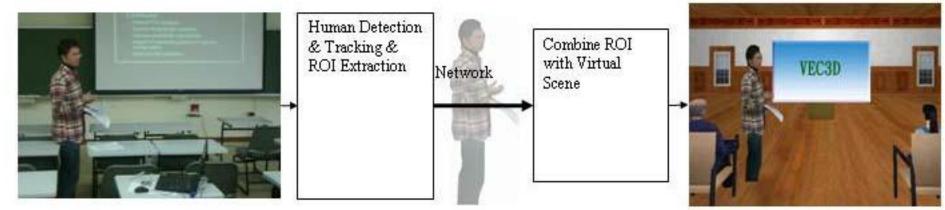


電腦視覺暨虛擬實境實驗室 Computer Vision & Virtual Reality LAB

Research Domain

- Computer Vision & Human Tracking
- Virtual Reality & Augmented Reality
- Sport Video Analysis & Traffic Surveillance
- Vision-Based Interface & Image-Based Rendering
- Robot Navigation & E-Learning





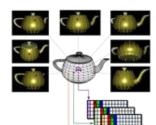
Adaptive Multi-part People Detection, Segmentation & Tracking

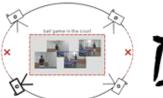
Our Research Lab Page67

Digital Image Vision Computing

Research Domain

- Image Processing
- Matting and Compositing
- Computer Graphics
- Computer Vision













VavGorh



I-Cheng Chang Asso. Professo

Education Background: Dept. of Electrical Engineering, National Tsing Hua University, Taiwan Research Interest: Image Processing, Computer Vision, Computer Graphics Tel: 8634022 Office: 工C316 實驗室:數位影像與視覺計算實驗室 (工C317; 分機: 4047)



Research Domain

- Cryptography
- Information & Network Security
- Coding Theory
- Internet Security
 - Visual Secret Sharing Scheme
 - Image Secret Sharing Scheme
 - Information Hiding
 - Digital Watermark
 - Digital Multimedia Security
 - Wireless Security
 - E-Commerce Security
 - Quantum Cryptography
 - Computer Memory Coding

Ching-Nung Yang Professr Education Background: Dept. of Electrical Engineering, National Cheng University, Taiwan Research Interest: Cryptography, Information and Network Security, Coding Theory It1: 8634025 Office : 工C314 實驗室: 密碼與資訊安全實驗室 LTA309; 分機 : 4042)

Steganography

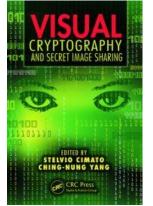
and

Watermarking

CHING-NUNG YANG

CHIA-CHEN LIN CHIN-CHEN CHANG

EDITOR



Our Research Lab Page69



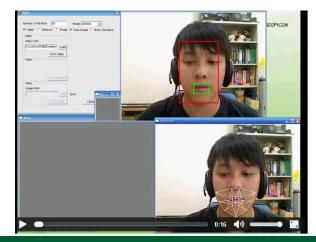
Multimedia Interaction Technology

多媒體互動技術實驗室

Research Domain

- Neural Networks
- Image Processing
- Pattern Recognition
- Intelligent Human-Machine Interface







Education Background: Dept. of Computer Science and Information Engineering, National Chiao Tung University, Taiwan Research Interest: Neural Network, Image Processing, Pattern Recognition, Intelligent Human-Machine Interface Tel: 8634027 Office: 工A322 實驗室:多媒體互動技術實驗室 (工A323; 分機: 4043)

Our Research Lab Page70





Research Domain

- Computer Supported
 Collaborative Learning (CSCL)
- Computer-Assisted
 - Language Learning (CALL)

Chih-Hung Lai Assis. Professor Education Background: Dept. of Computer Science

and Information Engineering,

Learning

National Central University, Taiwan

Digital Learning, Learning Technology, Mobile

Te1:8634057 Office:工A306 實驗室:學習科技實驗室

(工A423;分機:4003)

- Mobile Learning
- Game-Based Learning



CSCL為利用科技輔助學習與 學習者之間進行合作學習



CALL 為以電腦輔助及強化 語言學習



Mobile Learning 為使用手機、 PDA、GPS、RFID等設備輔 助學習者進行行動學習



Game-Based Learning 為藉由 學習者對遊戲產生的強烈動 機以輔助其進行學習活動

Networks & Systems Research Group

Hsin-Chou Chi Asso. Professor

Education Background: Dept. of Computer Science, University of California, Los Angeles, U.S.A. Research Interest: Computer Architecture, Parallel Processing, VLSI Design, Embedded Systems Tel: 8634019 Office: LC312

實驗室:計算機系統實驗室 (工A311;分機:4039) Chenn-Jung Huang Professor and Director of Library and I

Education Background: Dept. of Electrical Engineering, National Sum Yat-Sen University, Taiwan Research Interest: Machine Learning, Wireless Network, Embedded System, Electronic Learning Tel: 8634021 Office:工C322 實驗室:智慧型系統實驗室 (工C311:分機:4048)

Chang-Hsiung Tsai Professor

Education Background: Dept. of Computer Information Science, National Chiao Tung University, Taiwan Research Interest: Fault-Tolerant Computing, Peer-to-Peer Computing, Interconnection Networks, Embedded Systems Te1:8634001 Office:工C325 實驗室:分散式計算實驗室 (工E306:分機:4002)

Shou-Chih LO Asso. Professor

Education Background: Dept. of Computer Science, National Tsing Hua University, Taiwan Research Interest: Mobile Computing ,Wireless Network, Information Services Tel: 8634029 Office: 工A318 實驗室:無線網路服務工程實驗室 (工C319; 分機: 4015)

Min-Xiou Chen Asso. Professor

Education Background: Dept. of Computer Science and Information Engineering, National Chung Cheng University, Taiwan Research Interest: Computer Network, Wireless Network, Cloud

Network Te1:8634054 Office:工D308 實驗室:前端網路技術實驗室 (工D307;分機:4055)

Pao-Lien Lai Asso. Professor

Education Background: Dept. of Computer Information Science, National Chiao Tung University, Taiwan Research Interest: Interconnection Networks, Error-Diagnosis, Graph Theory, Fault-Tolerant Computing Tel: 8634053 Office: 工D306 實驗室:連結網路與容錯計算實驗室 (工D305; 分機: 4052) Chung Yung Assis. Professor Education Background: Dept. of Computer Science, New York University, U.S.A. Research Interest: Cloud Computing, Web Technology, Mobile Software, Compilers Tel: 8634017 Office: 工C310 實驗室:編譯技術與雲端計算實驗室 (工C315;分機: 4046)

Our Research Lab Page72



計算機系統實驗室 A311

Research Domain

- Computer Architecture
- Parallel Processing
- VLSI Systems
- System-on-Chip (SoC) Design
- Reconfigurable Computing
- Multiprocessor Networks
- Embedded Systems ---->





Intelligent System Laboratory

Research Domain

- **WIFY**
- Machine learning
- Intelligent Embedded Software
- Development Priorities:
 - Embedded Device Development
 - Cross-layer design optimizations in wireless protocol
 - Development of Machine Learning
 - Design Chips Applied with Intelligent Algorithms
 - Establishment on Intelligent Silicon Property (SIP) Database and Application for Patent

Platform Development for Intelligent Transportation Application Program





Distributed Computing Laboratory

Research Domain

- Fault-tolerant computing
- Parallel processing computing
- Peer-To-Peer computing
- Interconnection network
- Embedding system
- Operating System Engineering

Chang-Hsiung Tsai Professor

Education Background: Dept. of Computer Information Science, National Chiao Tung University, Taiwan Research Interest: Fault-Tolerant Computing, Peer-to-Peer Computing, Interconnection Networks, Embedded Systems Tel: 8634001 Office: 工C325 實驗室:分散式計算實驗室 (工E306;分機: 4002)

Our Research Lab Page75



Wireless Internet Service Engineering Laboratory

無線網路服務工程實驗室

Research Domain

- Vehicular Ad Hoc Network (VANET)
- Intelligent Transportation System (ITS)
- Delay-tolerant networks (DTN)
- Mobile Computing
- Wireless Network
- Information Services

Shou-Chih Lo Asso. Professor

Education Background: Dept. of Computer Science, National Tsing Hua University, Taiwan Research Interest: Mobile Computing ,Wireless Network, Information Services Tel: 8634029 Office: 工A318 實驗室: 無線網路服務工程實驗室 (工C319; 分機: 4015)





Advanced Network Technology Laboratory 前端網路技術實驗室

Min-Xiou Chen Asso. Professor

Education Background: Dept. of Computer Science and Information Engineering, National Chung Cheng University, Taiwan Research Interest: Computer Network, Wireless Network, Cloud Network Tel: 8634054 Office: 工D308 實驗室:前端網路技術實驗室 (工D307; 分機: 4055)

Research Domain

- Cloud Network
- Vehicular Ad Hoc Network (VANET)
- Wireless Communication
- Resource Management in Wireless Systems
- Wireless Sensor Network

NSC Projects

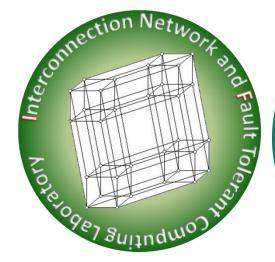
- 1. Network Mobility Management and Routing Strategies in Vehicular Networks
- 2. Virtual Network Environment Implementation and Management



Interconnection Network & Fault Tolerant Computing Laboratory

Research Domain

- Interconnection network
- fault-tolerant computing
- parallel computing
- Algorithms
- graph theory applications



Pao-Lien Lai Asso. Professor Education Background: Dept. of Computer Information Science, National Chiao Tung University, Taiwan Research Interest: Interconnection Networks, Error-Diagnosis, Graph Theory, Fault-Tolerant Computing Te1: 8634053 Office: 工D306 實驗室:連結網路與容錯計算實驗室 (工D305; 分機: 4052)

Study of graphs, mathematical structures used to model pairwise relations between objects from a certain collection in mathematics and computer science.

- **Interconnection networks** are currently being used for many different applications, ranging from internal buses in very large-scale integration (VLSI) circuits to wide area computer networks.
- The architecture of Interconnection networks is usually represented by graphs.
- **Fault-tolerance** is the property that enables a computer-based system to continue operating properly in the event of the failure of some of its components.
- Also, we invoke to popularize our research results by implementing the related algorithms with parallel techniques and then simulating and analyzing them.





Compiler Technology and Application Laboratory

Research Domain

Software Powe Consumption Reduction		Program Slicing	Constant Propagation		
Semantic Web		Programming Languages piler logy &	Database Semantics	Chung Yung Assis. Professor Education Background: Dept. of Computer Science, New York University, U.S.A. Research Interest: Cloud Computing, Web Technology, Mobile Software, Compilers	
Readability Metrics		Database Systems	Copy Elimination	Te1:8634017 Office:工C310 實驗室:編譯技術與雲端計算實驗室 (工C315;分機:4046)	
Incremental Parsing	Clone Detection	Code Size Reduction	Abstract Interpretation	Our Research Lab Page79	

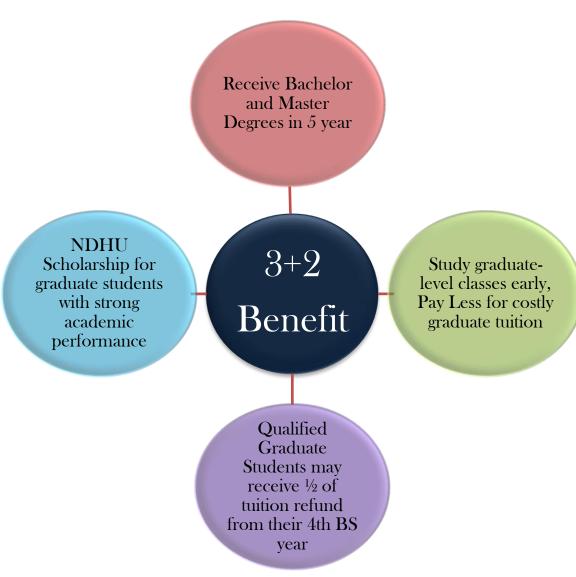
~ Extracurricular Activities~



國互東至

NDHU CSIE-5 Year for Bachelor & Master option

- Beginning from the 2nd semester of the 3rd year, undergraduate students can apply for the permission to study the graduate-level courses. Once approved, such students become "pre-qualified graduate students".
- The pre-qualified graduate students should receive their bachelor degrees on or before the 2nd semester of the 4th year (or the 8th semesters in total), and participate the examination or the application selection to enter the master program. Once approved, such students become "true" graduate students of CSIE.
- Students pay full tuition fee in the 4th year, may apply for upto 50% refund in their 1st year of graduate study.



Extracurricular Activities Page81



Great Achievements by our students









最佳論文獎

以區塊鏈建置學分幣完成公平的校園選課系統 楊慶隆,陳識宇,高語謙,向思遠,陸海量,莊佾庭

大會主席			
教育部	圆立中央大學	國立中央大學	國立中央大學
資訊及科技教育司代理司長	電子計算機中心主任	資電學院院長	管理學院院長
劉 文惠	周立德	范國演	許東夼
	中華民國 107年 10	月 24 日	



Extracurricular Activities Page82

Great Achievements by our students (in AI field)

- 6 Gold 4 Silver 2 Bronze Prizes from ICGA Computer Olympic Competition, 2020.
- Chinese Chess Artificial Intelligent Software–**NDHU 7**, successfully challenged human brain for the **World Record, on June, 30**, *2013*.
- Chinese Chess Artificial Intelligent Software–Cold Milk, won Professional Chess Player (Level 5) in November, 2012.



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Great Achievements by our students

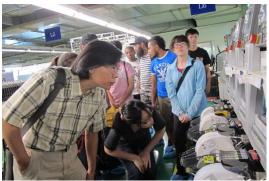




CSIE Industrial Visit



CSIE Industrial Visit













Extracurricular Activities Page86



✓ School Level–Offices of International Affair, Academic Affairs, Student Affairs

- ✓ Department—CSIE Family Mentors / Advisors, family companions
- ✓ Staff—Bilingual Staff in department office
- ✓ Class—Classmates interaction
- ✓ Supporting Groups–Student Associations, Sport Teams, Religion gatherings...



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NDHU CSIE - Spirit of King!





CSIE Int'l Students in Campus Events







LATIN CARIBBEAN CHRISTMAS EXPERIENCE 2021/12/24 17:00-20:00 C303 ENGINEERING BUILDING II

🤣 🛆 😡 🕪 😇 🎯



CSIE Int'l Students in Campus Events Int'l Cultural Night on 2021.11.24



CSIE Int'l Students in Campus Events Int'l Cultural Night on 2021.11.24







Benefits to study NDHU CSIE

- Amazing Natural Wonders / Comfortable Living Environment
 NDHU Scholarship for excellent students
- ✓ Great Academic / Research Environment
- ✓ Specious and Fully Equipped Research Lab
- Close interaction with professors and classmates
- Hands-On projects in all research labs
- Practical Training opportunities on-/off- campus, NDHU Innovation Incubation Center, and allied companies

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Be Part of the Top Team Join Dept of CSIE, NDHU

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