

Department of Electronic and Computer Engineering

Supervisor	General topic	Supervisor details/web pages
Ray-Guang Cheng	Random access procedure in cellular networks, machine-type communications (MTC)	http://www.et.ntust.edu.tw/et/faculty_en.php?user=crg
	Medium access control protocol for Ultra-reliable and low-latency Communicatoins (URLLC)	
	Low Power Wide Area Network (LPWAN) Technology (LoRa, NB-IOT)	
	Radio resource management for mobile networks	
	Management platform of Internet-of-Things (IoT), ThingWorx	
Shanq-Jang Ruan	Intelligent video surveillance system	
	Low Power image processing for OLED panels	
	FPGA systems designs	
	Software Define Network designs	
Rong-Jong Wai	Servo motor drives including induction motor, permanent magnet synchronous motor, direct current brushless motor, ultrasonic motor, and piezoelectric ceramic motor.	http://ece.ntust.edu.tw/files/11-1031-2489.php?Lang=zh-tw#
	Control theory applications including fuzzy theory, neural network, genetic algorithm, particle swarm evolution, grey theory, wavelet analysis, nonlinear control, adaptive control and optimal control.	
	Power electronics including quasi-resonant converter, pulse-width-modulated-type inverter, uninterruptible power supply, resonant theory, soft-switching mechanism, clamped technology and power grid-connected technique.	
	Mechatronics including motor-toggle servomechanism, motor-crank servomechanism, flexible robot arm, multi-link robot manipulators, mobile robot, dual-axis inverted-pendulum, maglev rail mechanism, elevator mechanism, direct-drive-type washing machine and CNC mechanism.	
	Energy techniques including fuel cell, solar photovoltaic and wind energy.	
Chung-An Shen	Software Defined Networking in Wireless Industrial Networks	http://cashen.et.ntust.edu.tw/
	Network Management of a Smart Factory using Software Defined Networking	
	Waveform Designs for 5G Wireless Communications	
	Signal Processing Techniques for Asynchronous Multicarrier Modulations	
Jenq-Shiou Leu	Mobile Service and Platform Design	http://www.et.ntust.edu.tw/et/faculty_en.php?user=jsleu
	Distributed Computing(P2P, Cloud Computing)	
	Multidisciplinary Integration	
	Green and Orange Technology Integration	
	IoT-related Topic	

	Machine Learning-related Application	
	Indoor Positioning Scheme	
	Security of Application, System, Network	
Yao-Ching Hsieh	Power Electronics	http://pelab.et.ntust.edu.tw/
	Battery Management System	
	Multi-level Power Converters	
Huang-Jen Chiu	Power Electronics	http://pelab.et.ntust.edu.tw/
	Wireless Power Transfer	
	Solar Inverter	
	Bidirectional DC-DC Power Conversion	
	Resonant Converters	
ChingShun Lin	Audio-visual fusion by machine learning	http://homepage.ntust.edu.tw/chingsh/
	Multichannel audio rendering and visualization	
	Virtual acoustics, room acoustics, equalization, and calibration	
	Deep learning and its application	
	Adaptive and statistical signal processing	
	Biomedical pattern recognition	
	Image understanding and reconstruction	
	Soft computing	
Poki Chen	Mixed-mode (analog+digital) IC design	http://www.ece.ntust.edu.tw/et/faculty_en.php?user=poki
	Temperature sensor	
	Time-to-digital converter	
	High precision analog IC layout	
	Analog applications of FPGA	
Chang-Hong Lin	Real-time human action analysis	http://ece.ntust.edu.tw/files/11-1031-1420.php?Lang=en#
	Distributed smart cameras	
	Image processing	
	Code compression for embedded processors	

	Embedded system design	
Shih-Hisnag Hsu	(1) Silicon Photonics on Optical Wavelength Filter and Braodband Coupler	
	(2) Surface Plasmonic Resonance Biosenisng	
	(3) Fiber Bragg Grating for Sensing Applications	
	(4) Siliconwire based Integrated Photonics Circuits	
Yung-Hui Chung	Analog/Mixed-signal IC Design	http://ece.ntust.edu.tw/files/11-1031-1420-1.php?Lang=en#
	Data Conversion Circuits	
	Digital Calibration Circuits	
	Biomedical Analog Front-End Circuits	
San-Liang Lee	General topics: optical communication network development and semiconductor optoelectronic devices processing.	http://bbcctr.ntust.edu.tw:443/Edefault
	Current research topics includes:	
	High speed optical transmission technology	
	Photonic integrated circuits on silicon	
	High-speed optical light sources on III-V materials.	
	High-speed optical transceivers.	
Far-infrared light sources and bio-medical applications		
Hsi-Hsir Chou	(1) Architecture Design of Optical Switching Node,	
	(2) Photonics Switching Technology,	
	(3) Photonics Switching System	
	(4) Short-range Optical Wireless Communications	
Chao-Hsiung Tseng	Biomedical Radar sensor and its signal processing	http://ece.ntust.edu.tw/files/11-1031-1420-1.php?Lang=en#
	Microwave circuits and modules	
	Radio-frequency integrated circuits (RFIC)	
Ding-Bing Lin	Efficiency Enhancement of Near-Field Coupled Pair for Wireless Power Transmission System	
	Power Integrity of PCB Layout for High-Speed Transmission System	
	Design of Broadband Common-Mode Noise Suppression Filter	
	Isolation Enhancement for MIMO Antenna Design	
	Cross Talk Reduction for Assymetry Multi Transmission Lines	

Huan-Chun Wang	MIMO detection	http://ece.ntust.edu.tw/files/11-1031-2489-1.php?Lang=zh-tw#
	Transceiver design for communication	
Wen-Hsien Fang	Statistical signal Processing	
	Wireless communications (with emphasis on resource allocation and parameter estimation)	
	Image/Video processing (with emphasis on abnormal detection, action recognition and location)	
Shien-Kuei Liaw	Fiber optic sensing	
	Optical measurement	
	Optical communications	