KUAN-LIN CHEN

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Research Interests

Signal Processing	Statistical Signal Srocessing, Filtering, Signal Decomposition
Machine Learning	Deep Learning, Bayesian Learning, Reinforcement Learning
Computer Vision	Pattern Recogniction, Object Localization, Pose Estimation

Education

University of California San Diego (UCSD)   *La Jolla, CA, USA*

M.S. in Electrical and Computer Engineering   *Sept. 2017 - PRESENT*

- Specialization: Signal and Image Processing
- Overall GPA 3.91 / 4.00

National Taiwan University (NTU)   *Taipei, Taiwan*

B.S.E. in Electrical Engineering   *Sept. 2011 - Jan. 2016*

- Overall GPA 3.77 / 4.30
- Graduate Courses Taken: Advanced Digital Signal Processing, Advanced Digital System Design, Time-frequency Analysis and Wavelet Transform, Music Signal Analysis and Retrieval.

Publications

[1] Huang, Yu-Chun and **Kuan-Lin Chen**. "Brain-Computer Interfaces (BCI) Based 3D Computer-Aided Design (CAD): To Improve the Efficiency of 3D Modeling for New Users." HCI (2017). [**pdf link**]

[2] Ming-Ying Wu, **KUAN-LIN CHEN**, AND YU-CHUN HUANG, "A SMART BRACELET: An alternative interfaces between performer and audience," *Proceedings of the 21st International Conference of the Association for Computer-Aided Architectural Design Research in Asia CAADRIA 2016*, pp. 311-319, 2016. [**pdf link**]

[3] Huang, Y. C., **Chen, K. L.**, Wu, M. Y., Tu, Y. W. and Huang, S. C. C., "Brain-Computer Interface Approach to Computer-Aided Design: Rotate and zoom in/out in 3Ds Max via imagination," *IHCI2015-Multi Conference on Science and Information Systems (MCCSIS2015) Proceedings*, 2015. [**pdf link**]

Research Experience

Smart Lab, University of California San Diego   *La Jolla, CA, USA*

Graduate Stduent   *Nov. 2017 - PRESENT*

- Building a real-time pose estimation system using multi-stage CNN.

Smart Interaction & Multimedia Design Lab, Tatung University   *Taipei, Taiwan*

Research Assistant   *Aug. 2014 - Aug. 2016*

- Proposed a system [1, 3] to control CAD software via imagination using EEG signal.
- Built a real-time system [1, 3] which receives cognitive signals from Emotiv EPOC+ neuroheadset and perform corresponding commands on 3ds Max and Rhino.
- Proposed an audience feedback system [2] for performing art.
- Built a wearable digital system [2] to measure the conductivity on the skin and transmit the data back to backend responsive server.

Sensortek Technology Corp. and Access IC Design Lab   *Hsinchu and Taipei, Taiwan*

Researcher for Industry-University Cooperative Research Project   *July 2014 - June 2015*

- Provided research studies and biomedical signal processing techniques to Sensortek Technology Corp. on several topics including Photo-plethysmography (PPG) and continuous blood pressure (CBP).

Ministry of Science and Technology, R.O.C. *Taipei, Taiwan*

Researcher for Undergraduate Research Project *July 2014 - Feb. 2015*

- Topic: Design and Implementation of Motion Artifact Reduction Technique for Photoplethysmography (PPG).
- Granted NTD $47,000.

Access IC Design Lab, National Taiwan University *Taipei, Taiwan*

Researcher for Special Project *Sept. 2013 - Feb. 2014*

- Implemented, synthesized and tested 64-point pipelined Radix 2^2 Single-path Delay Feedback (SDF) Fast Fourier Transform (FFT) processor in RTL level using Verilog (hardware description language) and CAD tools.

Industrial Experience

COMDEK Industrial Corp. *New Taipei City, Taiwan*

Full Stack Developer *June 2015 - June 2016*

- Independently developed a remote healthcare system named Central Station from scratch.
- Implemented Redis database, real-time Node.js server on Debian Linux, and client side module on MediaTek LinkIt 7688.
- Central Station is now under testing, and it will become a product in the next few years. **[pdf link]**

Part-Time System Engineer *June 2014 - June 2015*

- Built a system program based on 8051 MCU for portable pulse oximeter named MD-600P from scratch. **[pdf link]**
- Built a commercial differential counter named MD-200 based on ATmega64 for medical experiments. **[pdf link]**

Honors & Awards

Technical

2015	**Silver Medal Award**, Altera Innovate Asia FPGA Design Competition	*International*
	— Proposed a product based on FPGA which modulates the music with the accelerated signal.	
2015	**Second Prize Award**, Integrated Circuit Design Contest	*National*
	— Ranked 2nd nationally in the cell-based digital circuit category.	
2015	**Tenth Place**, IEEE Signal Processing Cup	*International*
	— Ranked 10th globally in motion artifact reduction of PPG signal.	

Innovation & Business

2015	**Second Prize Award**, NTU Innovation Contest	*Intramural, NTU*
	— Innovated and built a hardware using PPG and accelerated signal to provide a new user experience.	
2013	**Selected**, Samsung Mobilers	*National*
	— One of 36 Mobilers in Samsung Taiwan.	

Skills

Programming	Matlab, Python, C/C++, Verilog, HTML/CSS/JavaScript, LaTeX, Tensorflow, CUDA
Hardware	FGPA, ASIC, MCU
Languages	Mandarin Chinese (Native), English (Fluent)
Game of Go	5 dan amateur, certificated by Go Association of Republic of China