Resume

Chih-hung Cheng

886-958-798387 zhung1206@gmail.com

Department of Electronics Engineering, National Chiao Tung University

Skills	
Programming	C, C++, System Verilog, Verilog, Matlab, JavaScript, PHP, MySQL
Applications	TCAD
Languages	English: TOEFL iBT 90, Japanese: JLPT N1

Experiences			
Company	Job	Period	Descriptions
MediaTek	Internship	2017/08 | 2017/07	1. Introduction of physics in Flash memory NAND array 2. Automatically testing tool using C++ and Matlab 3. Leading our intern group making final microfilm
TEDxHsinchu	Vice Officer of IT Dept.	2016/06 | 2016/01	1. Installing server on Linode and database with MySQL 2. Using Laravel framework with admin page and file system 3. Support of front-end techniques
Taiwan Student Association, UTokyo	Full-stack Developer	2015/08 | 2015/05	1. An easy-to-use admin page with PHP code 2. New design and layout with XSLT and RWD 3. Re-defining the key vision in ginkgo green and orange color
Undergraduate Program of Engineering, NCTU	Student Project	2015/08 | 2015/02	My project, titled “Simulation and Analysis of Electronic Characters of 10 nm GAA Nanowire Transistor,” was simulated with TCAD. The device’s characters such as Vth and non-ideal effects are studied.

Educations			
School	Identity	Period	Activities
Department of Electronics Engineering, NCTU	Master	Now | 2016/02	Directed by Professor Steve S. Chung in NCTU, researching applications of RRAM in circuit level and device level.
USTEP, University of Tokyo	Exchange Student	2015/09 | 2014/10	1. Supporting XSLT coding and styling with prof. Charles Muller. 2. Studying control engineering and electronics circuit. 3. Learning C language.
Undergraduate Program of Engineering, NCTU	Bachelor Student	2011/09 | 2015/09	1. Project of 10nm nano-wire simulation with TCAD. 2. Organizing speech talk and developing homepage. 3. Participating in Kendo club and school soccer team.

Autobiography

Electronics Engineering in NCTU - More Than Major

I am Chih-hung Cheng, graduated from Undergraduate Program of Science and Engineering at National Chiao Tung University (NCTU). The goal of my department is to develop *students having knowledge of wide-range fields*, so besides my major, electronics engineering and electronic materials, I took a lot of general classes such as “Introduction to Computers and Programming” and “Basic Web Development.”

My major led me to a project, titled “Simulation and Analysis of Electronic Characters of 10nm Gate-all-around Nanowire Transistor.” In the work I basically used TCAD software to simulate a nanowire device. Finally the characteristic of the device such as current-voltage curve, and band diagram can be found. The results showed that effects like drain induced barrier lower and on-off drain current ratio are improved. Also, we got a low threshold voltage for reducing power. Though quantum effect is become significant, by technique of gate-all-around and the implant of high-K material, we successful made a device under well controlled.

Beyond my major, *I started studying web development by myself* around early 2012. My first work was the redesign of lecture notes of a general course. After my rearrangement, I made it a web version and uploaded, so every students now can access to it by visiting the URL. The second work was home page of my own department. The old one was ugly so I made a new style. Further, I created new pages that appeals to everyone for joining us, also put a section which gives you a brief introduction of nanometer.

Now, I *started research in memory devices* such as NAND flash and resistive random access memory, directed by Professor Steve S. Chung in NCTU. From fabrications of cell devices, to circuit level integration, my mater’s thesis is to bring these things together and make them work with an emerging memory and new array structure.

Exchange Life - At University of Tokyo

I enrolled in an *exchange program to Japan from 2014 September to 2015 August*. In that period, I have learned more and more subjects to broaden my skills. First I took “Control Engineering” course. This gave me a fundamental knowledge of system controlling such as N-order lag system, transient response, and feedback compensation. We visualized system by using of Bode plot, and analyzed numerically with equations like

Laplace transform and loop transfer function.

Besides, I learned programing. The chief of Taiwan Student Association of University of Tokyo ask me to build a new website so that they can update information and post activity records easily. Few months later, I completed with HTML and Javascript. Besides web development, I took program courses in University of Tokyo such as “Algorithm and Data-Structure,” and “Software I.” In software course, I learned C language and did projects. One of that was building a paint application and another was about the traveling salesman problem. On the other hand, I worked with professor Charles Muller, helped him build up a web dictionary with XSLT and XML.

In my leisure time, I joined music club and had a chance to performance chorus in the Yasuda auditorium. Sometimes I played soccer with Japanese and also did workout in gym periodically. The most impressive memory is standing at the top of Japan, Mt. Fuji. After 2-day journey with friends, we successfully climbed up to the top place, via Subashiri trail.

Extracurricular Activities - Soccer and Kendo

We share whatever win or loss, because we are a team. At a last minutes in the semi final of University Football Association held in Taiwan, we lost 1 score and lost the game. After the game, coach told us that “We won’t lose the game because of one miss. Forwards lost the ball, midfields were broken, backs didn’t protect well, and keeper didn’t take the ball, so we lost. WE all take the responsibility.” Teamwork is so important in soccer, and we learn from it. An year later, we joined matches again and took the second place.

“Synchronized breathe, sword, and body” is a principle in Kendo. I still remembered those smell of protectors and cloths, you can only see from the mask partially, so every move you make should be carefully considered, judging the movement from interactions between swords. Thus, I am able to highly concentrate my attention on things after about 2-year training. This let me win one match against National Tsing Hua University Team.

Intern in MediaTek - Excelsior and Self-Breakthrough

“Live and learn” is what we need to keep in mind all the time. In different professional fields, diversity is the key that enable us to broaden our vision. Internships in MediaTek is the challenge for me in this year. Detail-oriented, schedule-oriented, and people-oriented is just what I experienced during internship for 2 months. All people there always encourage me to do things better today than what we did yesterday, and have their own interests afterwork. It is an positive atmosphere that I can feel everywhere inside MediaTek.

My projects are to analyze physical behavior of Flash memory array and to build a GUI automatically testing tool. The first project is related to my research in school; however, I underestimated its complexity. Among specific existing mass-production Flash memory module, I have to explain issues such as open-header, weak points in array, or given programming order in an physical way. Those issues are what I would never know even if I could make a perfect single memory cell. What matters in IC design and in process technology are different, so we should think differently. The second project is my first time to build a Window GUI application. Fortunately, my experiences in web development helps me getting familiar with C++ without so much efforts, because all computer languages are logically equal with different expression. After discussion with colleagues based on complexity and future cross-system integration ability, we choose Qt in C++ as the main framework for our GUI tool.

“You should go to TSMC.” probably is the most I heard in department, but I would say that I should have go to design house rather than fabrication plant. In university, my department allows me study only in a specific field of semiconductor; thus, with the chance of internship this summer, I can truly touch the diversity of electronics engineering.

This is Me - Multitalented, Speaking Chinese, English, and Japanese

Ability to do research in electronics engineering, to speak multiple languages and to played variant sports press me to integrate them all into one. I am looking for any chance and stage to do my utmost, and I always believe that it is not company limit me but I limit myself. Last but no least, I am pretty looking forward, **to join the world**.