CHUN-YU KE

www.chunyuke.com

EDUCATION

National Taiwan University (NTU), Taipei, Taiwan **09/2012 – 06/2014**
Master of Science, Structural Engineering Division, Department of Civil Engineering
Thesis title: Development of Structure Optimal Design Software: Applications in Cable-Stayed Bridge Design
Thesis advisor: Professor Liang-Jenq Leu, Chairman of the department.
Overall GPA: 4.13/4.3 Ranking: 8/54

National Taiwan University (NTU), Taipei, Taiwan **09/2008 – 06/2012**
Bachelor of Science in Engineering, Department of Civil Engineering
Overall GPA: 83.66/100 Major GPA: 86.76/100 Ranking: 15/93

PROFESSIONAL EXPERIENCE

Intern Developer, Fourdesire Co., Ltd. **11/2015 – present**
- Apply skills in software developing, data handling, web/server programming and developing.

IT Consultant, IPworks Technology Corporation **01/2011 – present**
- Develop and maintain ERP system, official website, and other information systems.

Tutor of high school students in math, physics, and chemistry **09/2008 – present**
- One-on-one tutoring, taught 21 high school students among seven years.

Administrative Cadre, National Fire Agency, Ministry of the Interior, Taiwan (R.O.C.) **10/2014 – 09/2015**
- Fulfill compulsory military service in Taiwan (R.O.C.); administer and assist servicemen in NFA.
- Assisted in forensics, experiments, and ancillary works in the department of fire investigation.

IT Engineer, Envision Engineering Consultants Inc. **08/2014 – 10/2014**
- Developed structural design software to automate the design process.

Graduate Teaching Assistant of "Method of Finite Elements", National Taiwan University **02/2014 – 06/2014**
- Required course for graduate students in structural engineering division, taught by Prof. Chun-Shan Chen.
- Developed MATLAB program of 1D/2D/3D finite element analysis and visualization.
- Proofread and graded homework, lab assignments, project, and exam papers.

Graduate Teaching Assistant of "Advanced Structural Theory", National Taiwan University **09/2013 – 01/2014**
- Required course for graduate students in structural engineering division, taught by Prof. Liang-Jenq Leu.
- Adapted FORTRAN legacy code of matrix structural analysis to MATLAB.
- Proofread and graded homework, lab assignments, and exam papers.

HONORS AND AWARDS

Altruistic Award, College of Engineering, National Taiwan University **01/2014**
- This award shall spotlight the contributions and selfless dedication made by an individual to the society at large.

Outstanding Young Researcher Award, the Twenty-Sixth KKHTCNN Symposium on Civil Engineering **11/2013**
- This is the only award in the KKHTCNN Symposium. Only 7 winners from respective universities are honored with this award from fierce competition among over 200 contestants.

Outstanding Overseas School Award, the Fifth China National Structure Design Contest for College Students **11/2011**
- Lead the team and participate in the competition on behave of the department of Civil Engineering, NTU.

Outstanding Teamwork Award, 2011 Bridge Design Aesthetics Workshop, China Engineering Consultants, Inc. **08/2011**
- Lead the team and participate in the workshop on behave of the department of Civil Engineering, NTU.

PROJECTS

Minimization of Seismic Hazard at Nuclear Power Plants, Taiwan Power Company **2015**

- Principal Investigator: Prof. Kuo-Chun Chang, Director of National Center for Research on Earthquake Engineering.
- Co-PI: Associate Professor Yin-Nan Huang.
- Developed a seismic probabilistic risk assessment (SPRA) software with intuitive graphical user interface and efficient computation for modeling and analyzing seismic hazard at nuclear power plants.

The Optimization of Single-pylon Cable-stayed Bridge, CECI Engineering Consultants, Inc. **2014**

- Principal Investigator: Prof. Liang-Jenq Leu, Chairman of department of Civil Engineering, NTU.
- Developed an optimization software to perform bi-level optimization process directly on CSi SAP2000 model.
- Conducted research among different objective functions to design optimal pylon and cable configurations.
- Collected and analyzed dimensions of various existing cable-stayed bridges to verify the practicability of solutions.

Verification of the Experimental House w/ Energy-saving Strategies, Architecture and Building Research Institute **2014**

- Principal Investigator: Prof. Liang-Jenq Leu, Chairman of department of Civil Engineering, NTU.
- Developed a real-time remote monitoring software with 3D visualization and interactive GUI to record and monitor temperature and air pressure within the experimental houses.

Cable Maintenance Experiments of Guandu Bridge, CECI Engineering Consultants, Inc. **2013**

- Principal Investigator: Prof. Liang-Jenq Leu, Chairman of department of Civil Engineering, NTU.
- Participated in a series of ambient vibration measurements made on the decks and cables of the Guandu Bridge.
- Processed experimental data by spectral analysis to obtain the bridge frequency and the stiffness of cables.

Safety Assessment of Ting Ho Dunhua Building, KAICHU Engineering Consultants, Inc. **2013**

- Principal Investigator: Prof. Liang-Jenq Leu, Chairman of department of Civil Engineering, NTU.
- Built finite element models using commercial FEM software Abaqus and ETABS.
- Analyzed the building with linear perturbation method to evaluate the safety of atypical CFT columns and determine the buckling factors.

Interactive 3D Virtual Environment in Windows Phone, Microsoft Technical Evangelist Team **2012**

- Project Manager: Herman Wu, Sr. Technical Evangelist, Microsoft Taiwan.
- Develop interactive 3D virtual environment for seat selection feature in Windows Phone Apps of Taiwan Ambassador Theater and China Airline using Microsoft XNA game engine.

Translation of Building Code for the New Office of AIT, American Institute in Taiwan **2011**

- Principal Investigator: Prof. Liang-Jenq Leu, Chairman of department of Civil Engineering, NTU.
- Translate codes regulating design and construction of structures for the construction of the new office of American Institute in Taiwan (AIT) at Neihu in Taipei City.

LEADERSHIP

President of Civil Engineering Graduate Student Association, National Taiwan University **04/2013 – 04/2014**

Chief of the Activity Division of the 2010 NTU Civil Engineering Orientation Camp **04/2010 – 09/2010**

CERTIFICATES

Emergency Medical Technician-1 (EMT-1) 11/2014

- Trained and certificated by National Fire Agency, Ministry of the Interior (Taiwan, R.O.C.)

SKILLS AND LANGUAGES

Graphic and office software (Proficient): Microsoft Office (including VBA), AutoCAD, SketchUp
Structural analysis and BIM software (Competent): Abaqus, ETABS, SAP2000, Revit, Tekla
Programming language (Proficient): C++, C#, Java, MATLAB, FORTRAN, Visual Basic
Language: Mandarin (Advanced), English (Fluent)

RESEARCH INTERESTS

Structural Engineering and Computational Solid Mechanics. Optimal structural design, including structural topology optimization, multi-material design, microstructure design, and cable-stayed bridge design, etc. Seismic probabilistic performance/risk assessment.

PUBLICATIONS

Zhan X, **Ke CY**, Leu LJ. Optimal Design of Cable-Stayed Bridge Using Structural Analysis Software and Optimal Design Software. *Proceeding of the Sixth Cross-Straits Symposium on Monitoring and Control in Civil Engineering*, China, August 13-16, 2015.

Ke CY, Development of Structure Optimal Design Software: Applications in Cable-Stayed Bridge Design, Master's Thesis, National Taiwan University, 2014.

Ke CY, Shih KW, Leu LJ. Applications of Element Exchange Method in Structural Topology Optimization. *Proceeding of the Twenty-Sixth KKHTCNN Symposium on Civil Engineering*, Singapore, November 18-20, 2013.