

# Ming-Ting Yin

<http://mt-yin.github.io/>

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## Education

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### Master of Science

Jun. 2013

Control System Division, Mechanical Engineering,  
National Taiwan University  
Advisor: Dr. Hao-Ming Hsiao

### Bachelor of Science

Jun. 2011

Department of Mechanical Engineering,  
National Taiwan University  
Rank: 22/166

## Work Experience

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### Mechanical Engineer, Pegatron Corporation, Taiwan,

Nov. 2014 - Jun. 2015

- Developed computer device in a Joint-Design-Manufacture project in cooperation with product development team of Microsoft.
- Managed mechanical structure design and electronic components placement of development kit and test fixture during product design validation stages.
- Conducted mechanical simulation and stability analysis for product structure and material evaluation.

### Educational Substitute Military Service, Fu-Yuan elementary school, Taiwan,

Aug. 2013 - Jul. 2014

- Volunteered to serve in elementary school located in remote area for educational affairs and local community development.
- Managed computer classes for students and local residents in Digital-Opportunity-Center.
- Assisted in the training of six-grade students to participate in county programming contest with Scratch; our students were awarded second place in both digital game and animation design contest.

## Research Experience

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### Master thesis topic: A Novel Design Concept to Enhance Pulsatile Fatigue Life of Self-Expanding Stents.

- Designed cardiovascular self-expanding stents with an intriguing concept aimed at enhancing pulsatile fatigue resistance. Results showed that stent pulsatile fatigue life rapidly jumped to over 2.5 times without compromising stent profile and scaffolding.
- Developed finite-element models to simulate mechanical status of self-expanding stent during implantation and in the clinical environment; simulation results were used to evaluate pulsatile fatigue resistance and other critical properties of stents.

### Master projects in Advanced Medical Device Lab:

- Studied biomedical device automation such as automatic pilot of endoscopy and catheter steering control mechanism.

## **Bachelor projects:**

- Built a delta robot and derived inverse kinematic model for end effector position control. Image processing was performed to identify targets position for delta robot arm.
- Designed controllers based on robust control theory for DC motors motion control. Controllers were implemented on inverted pendulum and electrical medical devices such as wheelchairs and gait trainers.
- Integrated hydrogen fuel cell system onto electric bike using micro-controllers; valves on fuel cell were controlled to regulate hydrogen consumption and electric voltage.

## **Publications**

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### **Journal papers:**

- H. M. Hsiao, L. W. Wu, M. T. Yin, C. H. Lin and H. Chen, Quintupling fatigue resistance of intravascular stents via a simple design concept, Computational Materials Science, Vol. 86, pp. 57-63, 2014.
- H. M. Hsiao and M. T. Yin, An intriguing design concept to pulsatile fatigue life of self-expanding stents, Biomedical Microdevices, Vol. 16, No. 1, pp. 133–141, 2014.

### **Conference papers:**

- M. T. Yin, L. H. Chao, L. W. Wu, H. N. Yang, Y. H. Lin, and H. M. Hsiao, “Fatigue Life Enhancement of Peripheral Stents by an Intriguing Design Concept,” The 15th International Conference on Biomedical Engineering, Singapore, December 4-7, 2013.
- C. H. Lin, M. T. Yin, L. H. Chao, Y. H. Lin, and H. M. Hsiao, “Simulation of Blood Flow Behavior in Stented Coronary Arteries,” The 7th International Conference on Materials for Advanced Technologies, Singapore, June 30-July 5, 2013.

## **Skills**

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Mechanical design and analysis software:

- CAD: Pro/E, SolidWorks.
- Mechanical analysis: Abaqus, ANSYS

Programming software:

- LabVIEW, MATLAB, Simulink

Programming language:

- C/C++, HTML