

## Kim, Chi Yen



**Research Assistant Professor**  
**Mechanical Engineering**  
**W.M Keck Center for 3D Innovation**  
**University of Texas at El Paso**  
Engineering Bld Room 108  
500 West University Ave, El Paso, TX, 79968  
[ckim6@utep.edu](mailto:ckim6@utep.edu)  
+1 915-747-8691

### Resume

I was an assistant professor in Yeungnam College of Science & Technology and now works as Research Assistant Professor at Mechanical Engineering & W.M. Keck center for 3D Innovation in UTEP from April 1 2013. I have graduated from B.S to Ph.D at the school of mechanical engineering in Pusan National University and majored in control and measuring technologies, robotics and automation. When I worked at companies, SLS Co.Ltd and Tinics Korea Co.Ltd, I developed inspection systems and MILES gear systems. Now I have an interest in and research about the motion control system and dynamics of additive manufacturing process.

More detailed about my experience and career are address as follows;

### Education

- Ph.D.** Intelligent Control and Automation in the School of Mechanical Engineering, Pusan National University, Pusan, Korea  
Dissertation: *Reaction Force Estimation of Surgical Robot Instrument for Haptic Realization.*  
Advisors: Dr. Mincheol Lee  
Date of graduation: February 2013
  
- M.E.** Mechanical and Intelligent System Engineering  
Pusan National University, Pusan, Korea  
Master Thesis: *Development of a stereo vision system using reference object and relative stereo disparity with subpixel resolution*  
Advisor: Dr. Mincheol Lee  
Date of graduation: February 2001
  
- B.E.** Mechanical Engineering, Pusan National University, Pusan, Korea  
Date of graduation: February 1996

### Work Experience

- 11/2016- present      Topic organizer and session organizer  
ASME International mechanical engineering congress & Exposition (IMECE)

- 04/2013-present     *Assistant Research Professor*  
W.M Keck Center for 3D Innovation  
University of Texas at El Paso
- 04/2011-03/2013     *Assistant Professor*  
Division of Mechanical Engineering Technology  
Yeungnam College of Science & Technology
- 04/2008-03/2011     *Research Scientist, Advisor: Dr. Mincheol Lee*  
Pusan National University, Research Institute of Mechanical Engineering
- 12/2007-04/2008     *Shorterm Researcher, Advisor: Dr. Ryan Wicker*  
UTEP, W.M. Keck center for 3D Innovation
- 12/2002-08/2007     Chief manager of R&D group  
Tinics Korea.Ltd
- 02/2000-11/2002     Laser and Vision research Group- Researcher  
SLS Co.ltd

#### **Membership in Professional Societies**

- ◆ Member of Institute of Control, Robot, and Systems
- ◆ Member of Korea Society of Precision Engineering
- ◆ Member of IEEE

#### **Research Project**

- ◆ **AMERICA MAKES: Multi-functional BAAM: Big Area AM with Multi-Purpose Wire Embedding:**  
2017 –  
My Contribution : Researcher for manipulation system
- ◆ **AMERICA MAKES: A Low-cost Industrial Multi3D System for 3D Electronics Manufacturing:**  
OCT, 2016 –  
My Contribution : Researcher for Robotic assisted System Integration
- ◆ **AMERICA MAKES 3D Printing Multi-Functionality: Additive Manufacturing for Aerospace Applications**  
OCT, 2013 – MAY,2016  
My Contribution : Researcher for Robotic assisted System Integration
- ◆ **Development of Laparoscopic surgical robot system**  
Dec, 2007 – Nov, 2010  
Sponsor : Ministry of Knowledge Economy  
My Contribution : Member, Dynamic analysis and Control algorithm for surgical robot instrument
- ◆ **Development of Hybrid LED Advanced Front Fog & DRL**  
June, 2012 – Present  
Sponsor : Small & Medium Business Administration and JS Korea Co.Ltd  
My Contribution : Project Manager, LED lamp Source and Cooling System Design and

Overall Scheme

- ♦ Development of mobile fused deposition modeling system  
Jan, 2008 – April, 2008  
My Contribution : Member, System Integration.

**Publications (Most recent 3 years ) :**

1. **APPARATUS AND METHOD FOR CONFIGURING A VERTICAL INTERCONNECTION ACCESS AND A PAD ON A 3D PRINTED CIRCUIT UTILIZING A PIN**, US Patent App. 62/349,908
2. **METHOD AND APPARATUS FOR WIRE HANDLING AND EMBEDDING ON AND WITHIN 3D PRINTED PARTS**, US patent App. 15/244,061
3. **IN-SITU DIAGNOSTICS AND CONTROL METHOD AND SYSTEM FOR MATERIAL EXTRUSION 3D PRINTING**, US Patent APP. 62/330,361
4. **A study to detect a material deposition status in fused deposition modeling technology**, C Kim, D Espalin, A Cuaron, MA Perez, E MacDonald, RB Wicker, 2015 AIM.
5. **Sliding perturbation observer based reaction force estimation method of surgical robot instrument for haptic realization**, SM Yoon, MC Lee, CY Kim, International Journal of Humanoid Robotics 12(02)
6. **Cooperative tool path planning for wire embedding on additively manufactured curved surfaces using robot kinematics**, C Kim, D Espalin, A Cuaron, MA Perez, M Lee, E MacDonald, RB Wicker, Journal of Mechanisms and Robotics 7 (2)
7. **A Study on Manufacturing System Integration with a 3D printer based on the Cloud Network**, C Kim, D Espaline, E MacDonald, RB Wicker, DH Kim, JH Sung, JW Lee , Journal of the Korean Society of Manufacturing Process Engineers 14 (3)
8. **Dynamic modeling of coupled tendon-driven system for surgical robot instrument**, CY Kim, MC Lee, RB Wicker, SM Yoon, International Journal of Precision Engineering and Manufacturing 15(10)

Additional publications are able to be found in google scholar :

(<https://scholar.google.com/citations?user=ubfcayYAAAAJ&hl=en>)

**I hereby declare that the above statement is true and correct in every respect to the best of my knowledge.**