

# Sung Eun Kim

Ph.D., Yonsei University

## Interests

---

Wearables and artificial intelligence based precise diagnosis, personalized prescription, and simulation in sports and clinical care

## Education

---

03/01/14-02/26/18	<b>Ph.D.</b> Department of Sports Science Biomechanical Effects of Ball Position on the Swing Variables of Elite Golfers	Yonsei University, Korea
03/01/11-08/30/13	<b>M.S.</b> Department of Physical Education Effect of Inconsistent Ball Position on Address of the Elite Golfers	Yonsei University, Korea
08/23/04-05/06/08	<b>B.S.</b> Warrington College of Business Administration Major: Finance	University of Florida

## Position

---

08/16/22-02/15/24	<b>Stanford University</b> Dept. of Orthopaedic Surgery <i>Postdoctoral Scholar @ Ladd Lab, Motion &amp; Gait Lab</i> Develop wearable devices that provide real-time feedback and assistance to human sports activity and rehabilitation of hand osteoarthritis and cerebral palsy	
03/01/21-08/15/22	<b>Yonsei University</b> <i>Researcher @ Frontier Research Institute of Convergence Sports Science</i> Researched biomechanical risk factors of the golf swing-related knee injuries	Seoul, Korea
01/14/19-02/14/20	<b>Descente Korea</b> Descente Innovation Studio Complex <i>Research Engineer @ Human Performance Lab</i> Developed the first outsole stud design of spikeless golf shoes for DISC	Busan, Korea

## Publications

---

### Golf swing injury prevention

[6] Potential biomechanical risk factors on developing lead knee osteoarthritis in the golf swing  
**Sung Eun Kim**, Nicole S. Pham, Jae Hyeon Park, Amy Ladd, and Jangyun Lee. *Scientific Reports*. 2023 [in press]

[5] Reducing knee joint load during a golf swing: the effects of ball position modification at address  
**Sung Eun Kim**. *Journal of Sports Science and Medicine*. vol. 21, no. 3, pp. 393-400, Aug. 2022.

### Golf swing biomechanics

[4] Golf Swing in Response to Anteroposterior Ball Position  
**Sung Eun Kim**, Jangyun Lee, Sae Yong Lee, Hae-Dong Lee, Sung-Cheol Lee, and Jae Kun Shim. *International Journal of Sports Science & Coaching*. vol. 0, no. 0, 2022.

[3] Small changes in ball position at address cause a chain effect in golf swing  
**Sung Eun Kim**, Jangyun Lee, Sae Yong Lee, Hae-Dong Lee, Jae Kun Shim, and Sung-Cheol Lee. *Scientific Reports*. vol. 11, no. 2694, Jan. 2021.

[2] Biomechanical Effects of Ball Position on Address Position Variables of Elite Golfers

**Sung Eun Kim**, Young-Chul Koh, Joon-Haeng Cho, Sae Yong Lee, Hae-Dong Lee, and Sung-Cheol Lee. *Journal of Sports Science and Medicine*. vol. 17, no. 4, pp. 589-598, Dec. 2018.

[1] Effect of golf club path to ball launch direction at impact

Young Hoon Choi, Sung-Cheol Lee, and **Sung Eun Kim**. *The Korean Journal of Physical Education*, vol. 57, no. 5, pp. 407-415, Sep. 2018.

### **Manuscripts in progress**

More forward center of pressure is associated with higher knee internal rotation moment in golf swing  
**Sung Eun Kim** and Jangyun Lee.

More flexed knee angle during the downswing is associated with higher knee loading in golf swing  
**Sung Eun Kim**

Biomechanical risk factors of the medial compartment knee osteoarthritis in golf swing  
**Sung Eun Kim**, I Seul Cho, and Hae-Dong Lee

Electromyographic and kinematic analysis of golf putting: comparison between professional and amateur golfers

Jangyun Lee, **Sung Eun Kim**, Seong Ho Jang, and Jae hyeon Park

### **Patents**

[2] Golf footwear prevented rotary and horizontal slippage ([R90](#))

**Sung Eun Kim** and Jae Ik Lee, *Descente Korea*. 10-2344447, KR, Dec. 2021.

[1] Balancing golf apparel ([Utility](#))

**Sung Eun Kim**, Seung Chul Hyun, and Ji Sun Bang, *Descente Korea*. 10-2300002, KR, Sep. 2021.

### **Conferences**

[3] Ground reaction force, pelvis and upper torso rotations in change of ball position along the mediolateral direction: effects on the club path

**Sung Eun Kim** and Sung-Cheol Lee. *The 7th Asian society of sport biomechanics conference* (ASSB 2018), Oct. 2018.

[2] Pelvis and upper torso rotations in change of ball positions along the anteroposterior direction: effects on the club-head velocity

**Sung Eun Kim** and Sung-Cheol Lee. The 30th international Sport Science Congress, The 56th KAHPERD Conference, *The 99th National Sports Festival Commemoration*, In Commemoration of the 1988 Seoul Olympic Games, Oct. 2018.

[1] Effects of Inconsistent Ball Position on Address of the Elite Golfers

**Sung Eun Kim**, Young-Chul Koh, Joon-Haeng Cho, Sae Yong Lee, Hae-Dong Lee, and Sung-Cheol Lee. *The 25<sup>th</sup> International Sport Science Congress of Korean Society for History of Physical Education, Sports and Dance* (KAHPERD), Aug. 2013.

### **Invited talk**

[1] Peak performance training methods to improve distance and accuracy in golf

The 2021 Korean Academy of Sports Science and Exercise Medicine Conference in Seoul, Korea.

### **Grants**

---

09/21-08/22 **National Research Foundation (NRF)**

*Principal Investigator*

## Experience

---

05/18-01/19	<b>Descente Korea</b> <i>Consultant</i> Developed the first biomechanical golf apparel for Descente Korea	Seoul, Korea
03/15-02/19	<b>Yonsei University</b> <i>Lecturer</i> Sports Biomechanics, Golf, Teaching Methods in Golf 1, Teaching Methods in Golf 2, Physical Training	Seoul, Korea
03/14-01/19	<b>Yonsei University</b> <i>Teaching Assistant</i> Biomechanics 1, Sports Biomechanics 2, Seminar of Biomechanics 1 & 2, Advanced Biomechanics, Application of Computer in Physical Education, The Understanding of LabVIEW Programming	Seoul, Korea
08/04-05/08	<b>University of Florida</b> <i>Member of Women's Golf Team</i>	Gainesville, FL

## Scholarship

---

08/04-05/08	Full athletics scholarships	University of Florida
-------------	-----------------------------	-----------------------

## License

---

08/10-Now	<b>Ladies Professional Golf Association (LPGA)</b> <i>Class A Member of LPGA Professional</i>	Daytona Beach, FL
-----------	--	-------------------

## Awards

---

### Academic

2006	<b>Dean's List</b> Warrington College of Business	University of Florida
2004-2008	<b>SEC Academic Honor Roll</b> Southeastern Conference	Southeastern Conference

### Athletic

2004	<b>Topy Cup</b> Finished seventh	U.S. - Japan Intercollegiate Golf Championship
2002	<b>U.S. Women's Amateur sectional qualifying</b> Won	United States Golf Association
2002	<b>U.S. Girls' Junior</b> Advanced to the 8 <sup>th</sup>	United States Golf Association
2002	<b>AJGA Club Corp Championship</b> Finished second place	American Junior Golf Association
2002-2003	<b>AJGA events</b> Recorded six top-ten finishes	American Junior Golf Association
2000-2002	<b>SCPGA events</b>	Southern California Junior Tour

Won six times

## **Activities**

---

2012-2014 Translator and Instructor in the LPGA Teacher Education Program

Daytona Beach, FL

## **Contact**

Dept. of Orthopaedic Surgery  
450 Broadway Street  
Pavilion C, MC 6342  
Redwood City, CA (94063)

cjsekim@stanford.edu  
650-531-1443

## **Languages**

Korean (mother language), English (fluent)

## **Programming**

LabVIEW®  
Visual3D®  
MATLAB®

## **Equipments**

### **Motion capture camera**

Vicon® Motion, Analysis®

### **Force plate**

AMTI®, Kistler®

### **Electromyography**

Delsys®, Noraxon®

### **Novel**

Pedar®, Loadsol®, Emed®

### **IMU sensor**

4D motion®

### **Foot scanner**

INFOOT 3D scanner®

### **High speed camera**

Phantom®

**Launch monitor**

Trackman®, Flight Scope®

Last updated: December, 2022