

Keum San Chun

Personal Data

Keum San Chun

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Education

University of Texas-Austin, Austin, TX
Cockrell School of Engineering
M.S./Ph.D. Electrical Engineering
Supervisor: Edison Thomaz, Ph. D.
2015 – Present

University of Wisconsin-Madison, Madison, WI
College of Engineering
B.S. Biomedical Engineering
Supervisor: John G. Webster, Ph. D.
2009 – 2015

Professional Interests

Wearable/Mobile Computing

Mobile Healthcare: Continuous monitoring of health for early detection of underlying diseases

Human Activity Recognition: Inferring pathophysiological state from human activities

Medical Devices, Sensors and Instrumentation

Physiological Measurements

Machine Learning

Experience

- 2018 **Neurotechnology Intern, Battelle Memorial Institute (Columbus, OH)**
Summer NeuroLife™
Supervisor: Patrick Ganzer, Ph. D.
Developing a non-invasive closed-loop bioelectronic medical system for treating hypertensive crisis
- 2017 ~ **Graduate Research Assistant, University of Texas at Austin (Austin, TX)**
Human Signals Lab
Supervisor: Edison Thomaz, Ph. D.
Utilizing sensors in commodity devices for activity recognition and health monitoring
- 2016 ~ 17 **Graduate Research Assistant, University of Texas at Austin (Austin, TX)**
Lewpea Lab (Cognitive Neuroscience Lab)
Supervisor: Jarrod A. Lewis-Peacock, Ph. D.
Realtime functional magnetic resonance image processing pipeline for studying prospective memory
- 2014 ~ 15 **Undergraduate Research Assistant, University of Wisconsin at Madison (Madison, WI)**
Bioinstrumentation Lab
Supervisor: John G. Webster, Ph. D.
Asthma shirt: a continuous monitoring system for asthma attack

Journal Publications

- March **Detecting Eating Episodes by Tracking Jawbone Movements with a Non-Contact Wearable Sensor**
2018 Keum San Chun, Sarnab Bhattacharya, Edison Thomaz
Proceedings of the ACM: Interactive Mobile, Wearable and Ubiquitous Technologies (IMWUT)
Volume 2, Issue 1
- January **Reducing thumb extensor risk in laboratory rat gavage**
2017 Amit J. Nimunkar, Keum San Chun, Ngoc Phung, Kevin Wreksoatmodjo, Thomas Y. Yen, Robert G. Radwin
Applied Ergonomics 58 (2017): 151-155.

Teaching Experience

- Spring **Undergraduate Tutoring, (General Physics, Signal Processing)**
2014 Greater University Tutoring Service (GUTS)
University of Wisconsin at Madison
- Spring **Undergraduate Tutoring, (Organic Chemistry)**
2011 Greater University Tutoring Service (GUTS)
University of Wisconsin at Madison
- Fall **Undergraduate Tutoring, (General Physics)**
2010 Greater University Tutoring Service (GUTS)
University of Wisconsin at Madison

Certification

- August **National Instruments Certified LabVIEW Associate Developer (CLAD)**
2016

Other Experience

- 2011~2013 **Republic of Korea Army, Ministry of Defense (Seoul, Korea)**
Information & Security

Projects

- 2018 **Non-invasive Closed-loop Bioelectronic Medical System for Treating Hypertensive Crisis**
Summer Developing a non-invasive closed-loop bioelectronic medical system for treating hypertensive crisis
- 2018 **Android App for Bio-Tattoo Sensor**
Summer Developing an Android app with real time respiratory rate calculation algorithm
- 2018 **Drinking Detection Using a Commercial Activity Tracker**
Spring Developed a drinking detection algorithm (90.3 % precision and 91.0% recall)
- 2017 **Eating Detection using an IR proximity sensor**
Fall Developed a wearable necklace for automated dietary monitoring (95.2% precision and 81.9% recall)
- 2017 **Portable Visual Evoked Potential (VEP) Measurement Device**
Spring A portable Point-Of-Care device for VEP
- 2016 **Real-time Functional MR Image Processing Program for Neurofeedback System**
Fall Realtime functional magnetic resonance image processing pipeline for prospective memory study
- 2015 **Automated Rat Gavage System**
Spring Designed an automated gavage system that links RFID animal database with infusion pump
- 2015 **Asthma Shirt – Non-invasive Asthma Monitoring System**
Spring A continuous monitoring system for detecting asthma attack
- 2014 **EMG Assisted Control System**
Spring Linked contraction of biceps for controlling windows master volume for patients without fine motor control