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
Automated Dietary Monitoring
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

Experience

2017 ~ **Graduate Research Assistant, University of Texas at Austin (Austin, TX)**
Human Signals Lab
Supervisor: Edison Thomaz, Ph. D.
Utilizing sensors in custom devices and commodity devices for activity recognition and health monitoring

2018 Summer **Neurotechnology Intern, Battelle Memorial Institute (Columbus, OH)**
NeuroLife™
Supervisor: Patrick Ganzer, Ph. D.
Developing a non-invasive closed-loop bioelectronic medical system for treating hypertensive crisis

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 2018 **Detecting Eating Episodes by Tracking Jawbone Movements with a Non-Contact Wearable Sensor**
Keum San Chun, Sarnab Bhattacharya, Edison Thomaz
Proceedings of the ACM: Interactive Mobile, Wearable and Ubiquitous Technologies (IMWUT)
Volume 2, Issue 1

January 2017 **Reducing thumb extensor risk in laboratory rat gavage**
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 2014 — **Undergraduate Tutoring, (General Physics, Signal Processing)**
Greater University Tutoring Service (GUTS)
University of Wisconsin at Madison

Spring 2011 — **Undergraduate Tutoring, (Organic Chemistry)**
Greater University Tutoring Service (GUTS)
University of Wisconsin at Madison

Fall 2010 — **Undergraduate Tutoring, (General Physics)**
Greater University Tutoring Service (GUTS)
University of Wisconsin at Madison

Other Experience

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

Projects

2018 Summer — **Non-invasive Closed-loop Bioelectronic Medical System for Treating Hypertensive Crisis**
Developing a non-invasive closed-loop bioelectronic medical system for treating hypertensive crisis

2018 Summer — **Android App for Bio-Tattoo Sensor**
Developing an Android app with real time respiratory rate calculation algorithm

2018 Spring — **Drinking Detection Using a Commercial Activity Tracker**
Developed a drinking detection algorithm (90.3 % precision and 91.0% recall)

2017 Fall — **Eating Detection using an IR proximity sensor**
Developed a wearable necklace for automated dietary monitoring (95.2% precision and 81.9% recall)

2017 Spring — **Portable Visual Evoked Potential (VEP) Measurement Device**
A portable Point-Of-Care device for VEP

2016 Fall — **Real-time Functional MR Image Processing Program for Neurofeedback System**
Realtime functional magnetic resonance image processing pipeline for prospective memory study

2015 Spring — **Automated Rat Gavage System**
Designed an automated gavage system that links RFID animal database with infusion pump

2015 Spring — **Asthma Shirt – Non-invasive Asthma Monitoring System**
A continuous monitoring system for detecting asthma attack

2014 Spring — **EMG Assisted Control System**
Linked contraction of biceps for controlling windows master volume for patients without fine motor control

Skills

Programs : Code Composer Studio (CCS), AutoCad, Eagle, MATLAB, Android Studio, SolidWorks, LabVIEW
Programming Languages : C, Java, Python
Operating Systems : MacOS, Ubuntu, Windows