Weixuan Chen (Vincent Chen)

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EDUCATION

Massachusetts Institute of Technology,
Media Lab, Cambridge, MA
Ph.D. in Media Arts and Sciences
Cumulative GPA: 5.00/5.00, getting A+ in half of the courses

University of Pennsylvania, *May 2014*
School of Engineering and Applied Science, Philadelphia, PA
M.S.E. in Bioengineering and Biomedical Engineering
Cumulative GPA: 3.96/4.00, getting A+ in half of the courses

Tsinghua University, *July 2012*
School of Medicine, Beijing, China
B.Eng. in Biomedical Engineering
Minor in Technology Entrepreneurship, conferred by University of California, Berkeley
Cumulative GPA: 91.39/100, Ranking: 2/25

LAB PROJECTS

Affective Computing Group, MIT Media Lab September 2014 - Present
Following Prof. Rosalind W. Picard *Cambridge, MA*

- Eliminating Physiological Information from Facial Videos
- Multimodal Ambulatory Sleep Detection Using Recurrent Neural Networks
- Ambulatory Facial Expression Monitoring Using a Head-mounted Wearable Device
- Predicting Perceived Emotions in Animated GIFs with 3D Convolutional Neural Networks
- Motion Component Magnification
- Estimation of Electrodermal Activity Using Capacitive Sensing
- Non-contact physiological measurements from near-infrared video of the neck
- Improving sleep-wake schedule using sleep behavior visualization and a bedtime alarm
- Motion artifact identification and removal for electrodermal activity
- SmileTracker: automatically and unobtrusively recording smiles and their context

Litt Lab for Translational Neuroengineering, UPenn September 2012 - June 2014
Following Prof. Gershon Buchsbaum and Prof. Brian Litt *Philadelphia, PA*

- Predictive matching pursuit and its application to real-time seizure detection
- Logistic-weighted regression improves decoding of finger flexion from electrocorticographic signals
- Cortical visualizers for the International Epilepsy Electrophysiology Portal and BrainMapper

Media Lab, Tsinghua University May 2012 - August 2012
Following Prof. Li Zhao *Beijing, China*

- Adaptive reduction of motion artifact in optical skin monitoring using accelerometers

Neuroengineering Lab, Johns Hopkins University June 2011 - August 2011
Following Prof. Nitish V. Thakor *Baltimore, MD*

- Dynamic classification of motor imagery EEG with sequential hypothesis testing (SHT) algorithm

Institute of Neural Engineering, Tsinghua University October 2009 - July 2012
Following Prof. Bo Hong *Beijing, China*

- GoodNite - a portable sleep monitor combining frontal EEG and head motion information
- Individualized cortical function mapping using high gamma activity
- Competition platform of online brain-computer interface based on steady-state visually evoked potential (SSVEP)
- 3D registration and visualization system for epileptic surgery planning

RELEVANT GRADUATE COURSES

A+: Machine Perception, Sensor Technologies for Interactive Environments, Statistics for Neuroscience Research, Tools for Well-Being, Health Behavior Change Lab

A: Neural Networks: Theory and Applications, Advances in Computer Vision

Listener: Machine Learning, Statistical Learning Theory and Applications

PUBLICATIONS

Chen, W., Rudovic, O., Picard, R. W. *"GIFGIF+: Collecting Emotional Animated GIFs with Clustered Multi-Task Learning,"* In Proc. International Conference on Affective Computing and Intelligent Interaction (ACII), San Antonio, Texas, 2017.

Hernandez, J., Ferguson, C., Sano, A., Chen, W., Weihui, L., Yeung, A. and Picard, R. *"Stress Measurement from Tongue Color Imaging,"* In Proc. International Conference on Affective Computing and Intelligent Interaction (ACII), San Antonio, Texas, 2017.

Chen, W.*, Sano, A.*, Lopez, D., Taylor, S, McHill, A. W., Phillips, A. J. K., Barger, L. K., Czeisler, C. A., and Picard, R. W. *"Multimodal Ambulatory Sleep Detection Using Recurrent Neural Networks,"* In Proc. the 31st Annual Meeting of the Associated Professional Sleep Societies (APSS), 2017. (*equal contribution)

Chen, W., and Picard, R. W. *"Eliminating Physiological Information from Facial Videos,"* In Proc. the 12th IEEE Conference on Automatic Face and Gesture Recognition, Special Session on Remote Physiological Measurement from the Face and Body, Washington, DC, 2017.

Chen, W.*, Sano, A.*, Lopez, D., Taylor, S., McHill, A. W., Phillips, A. J. K., Barger, L. K., Klerman, E. B., and Picard, R. W. *"Multimodal Ambulatory Sleep Detection,"* In Proc. IEEE International Conference on Biomedical and Health Informatics (BHI), Orlando, Florida, pp. 465-468, 2017. (*equal contribution)

Kan, V., Vargo, E., Machover, N., Ishii, H., Pan, S., Chen, W., and Kakehi, Y. *"Organic Primitives: Synthesis and Design of pH-Reactive Materials using Molecular I/O for Sensing, Actuation, and Interaction,"* In Proc. ACM CHI Conference on Human Factors in Computing Systems, Denver, Colorado, 2017. *BEST PAPER AWARD*

Chen, W., and Picard, R. W. *"Predicting Perceived Emotions in Animated GIFs with 3D Convolutional Neural Networks,"* In Proc. IEEE International Symposium on Multimedia, San Jose, California, December 2016.

Jaques, N., Rich, T., Dinakar, K., Farve, N., Chen, W., Maes, P., Picard, R., and Slavin, K. *"BITxBIT: Encouraging Behavior Change with N=2 Experiments,"* In the proceedings of the Conference on Human Factors in Computing Systems Late Breaking Works (CHI'16), San Jose, California, 2016.

Chen, W., Sra, M., and Picard, R.W. *"Improving Sleep-Wake Schedule Using Sleep Behavior Visualization and a Bedtime Alarm,"* In Proc. International Conference on Wireless Mobile Communication and Healthcare (MobiHealth), London, Great Britain, October 2015.

Chen, W., Jaques, N., Taylor, S., Sano, A., Fedor, S., and Picard, R. *"Wavelet-Based Motion Artifact Removal for Electrodermal Activity,"* In Proc. International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Milan, Italy, August 2015.

Taylor, S.*, Jaques, N.*, Chen, W., Fedor, S., Sano, A., and Picard, R. *"Automatic Identification of Artifacts in Electrodermal Activity Data,"* In Proc. International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Milan, Italy, August 2015. (*equal contribution)

Jaques, N.*, Chen, W.*, and Picard, R. *"SmileTracker: Automatically and unobtrusively recording smiles and their context,"* In the proceedings of the Conference on Human Factors in Computing Systems, 2015, Seoul, Korea. (*equal contribution)

Chen, W., Liu, X., Litt, B. *"Logistic-weighted regression improves decoding of finger flexion from electrocorticographic signals,"* 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC), Chicago, USA, pp. 2629-32, August 2014.

Azarion, A. A., Wu, J., Davis, K. A., Pearce, A., Krish, V. T., Wagenaar, J., Chen, W., Zheng, Y., Wang, H., Gee, J. C., Litt, B. *"An Open-Source Automated Platform for Three-Dimensional Visualization of Subdural Electrodes Using CT-MRI Coregistration,"* Epilepsia. 2014 Nov 6;1-10.

Chen, W. *"Predictive matching pursuit and its application to real-time seizure detection,"* Master's Thesis. University of Pennsylvania, 2014.

Chen, W., Litt, B., Buchsbaum, G. *"Predictive matching pursuit,"* UPenn Bioengineering 40th Anniversary Symposium: Poster Session, 2013.

Chen, W. *"Development and implementation of a sleep staging algorithm combining frontal EEG and head motion information,"* Senior Thesis. Tsinghua University, 2012.

Chen, W. *"A device preventing and monitoring cervical spondylosis,"* Patent 201220354960.4.

Qian, T., Song, H., Chen, W., Gong, E., Gao, S., Hong, B. *"Individualized cortical function mapping using high gamma activity,"* 3rd International Conference on Image and Signal Processing (CISP) and 3rd International Conference on Biomedical Engineering and Informatics (BMEI), Yantai, China, pp. 324-328, October 2010.

SELECTED PRESS

Boston Magazine (January, 2015), "Website Tracks Your Happiness to Remind You Life's Not So Bad."

TECHNICAL STRENGTHS

Computer Languages	Python, Matlab, C, C++, C#, Objective-C, Java
Tools	Caffe, TensorFlow, Keras, Theano, Visualization Toolkit (Kitware, Inc.) OpenCV, Subversion (CollabNet, Inc.), Curry (NeuroScan, Inc.), Presentation (Neurobehavioral Systems, Inc.), ITK-SNAP, BrainVoyager QX (Brain Innovation B.V.)
Special Skills	EEG acquisition, PCB design, Web design

WORK EXPERIENCE

Research Intern — Redmond, WA
Microsoft Research — *June 2017 - August 2017*

Teaching Assistant — Department of Bioengineering, UPenn, Philadelphia, PA
BE-301 Bioengineering Signals & Systems — *September 2013 - December 2013*

PROFESSIONAL ACTIVITIES

Reviewer:
IEEE Transactions on Multimedia
IEEE Transactions on Biomedical Engineering
PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies
IEEE Transactions on Circuits and Systems for Video Technology
IEEE Transactions on Neural Systems and Rehabilitation Engineering
Biomedical Optics Express
Physiological Measurement
IEEE Conference on Automatic Face and Gesture Recognition 2017
IEEE International Conference on Biomedical and Health Informatics 2017
IEEE International Symposium on Robot and Human Interactive Communication 2016
ACM International Joint Conference on Pervasive and Ubiquitous Computing 2016
IEEE EMBS Annual International Body Sensor Networks Conference 2016
ACM CHI Conference on Human Factors in Computing Systems 2016
ACM CHI Conference on Human Factors in Computing Systems 2015

Program Committee:
1st International Workshop on Computer Vision for Physiological Measurement (CVPM)

HONORS & AWARDS

09/2014 Wellbeing Innovation Fellow by the Robert Wood Johnson Foundation (RWJF)

05/2013 Winner of the 2013 Brain Computer Interface Competition at UPenn

06/2012 "Excellent Graduate" of Tsinghua University (top 5%)

05/2012 Microsoft Innovate4Good Membership

10/2011 Third prize in the 12th "Challenge Cup" Extracurricular Academic Science and Technology Competition for National College Students

10/2011 Third prize in the 4th "CapitalBio Cup" Medical Instrument Design Contest

06/2011 Grand prize in the 6th "Challenge Cup" Extracurricular Academic Science and Technology Competition For Capital College Students

04/2010 "Spark" Innovative Student Fellowship (top 1.5%)

04/2010 Second prize in the 28th "Challenge Cup" Extracurricular Academic Science and Technology Competition for Tsinghua University students

03/2010 2010 Winner of the EDA (Electronic Design Automation) Practice

12/2009 First prize in the National College Physics Contest

05/2009 "Outstanding Individual on Science and Technology" of School of Medicine (top 1%)

05/2009 Second prize in the 2nd "Mindray Cup" Medical Instrument Design Contest

04/2009 "Best Freshman Award" and third prize in the 27th "Challenge Cup" Extracurricular Academic Science and Technology Competition for Tsinghua University students

SCHOLARSHIPS

10/2011 National Scholarship (the highest distinction for Chinese college students)

10/2011 First prize of the College Academic and Technological Scholarship

11/2010 Second prize of the College Academic and Technological Scholarship

11/2010 HSBC Scholarship by HSBC Inc.

11/2009 Third prize of the College Academic and Technological Scholarship

11/2009 Dingye Mailin Scholarship by Tripod Preclinical Research Laboratories Inc.

11/2009 Dongfang Yide Scholarship by Beijing Cathayeast Inc.

LEADERSHIP ACTIVITIES

07/2010-07/2012 Vice president of the 4th "Spark" Innovative Student Fellowship Program

09/2009-01/2012 Secretary, vice leader and leader of the Research and Planning Group in the Technology & Innovation Center of Tsinghua University

09/2010-07/2011 First principal of the class, helped win the "Best Class" honor of the university

03/2009-07/2011 Secretary and vice chairman of the Student Association for Science and Technology in the School of Medicine at Tsinghua University, won the title of Excellent Leader

09/2009-07/2010 Secretary of the "Times Forum" Department in the Student Union of Tsinghua University

VOLUNTEER ACTIVITIES

04/2012 Measured blood pressure for the aged in the Heqing Community and popularized knowledge about hypertension

04/2011 Volunteered in the donation ceremony of Kunshan City

07/2010 Hosted the exchange students from National Tsing Hua University (Taiwan)

11/2009 Volunteered in the Beijing International Workshop on Auditory Neuroscience (BIWAN)

10/2009 Volunteered in the Chinese Science and Technology Museum

10/2009 Volunteered in the "Challenge Cup" Technological Innovation Exhibition

10/2009 Took part in the 60th National Day celebrations in Beijing, China, awarded as the Excellent Member

04/2009 Volunteered in the alumni survey for the anniversary of Tsinghua University