Shibo **Zhang**

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I am actively looking for a researcher position. My research area is ***machine learning*** and ***passive sensing***, with a focus on human activity recognition and health monitoring. I am interested in applying machine learning and deep learning to all kinds of real-world problems to facilitate human life.

Research Interests

Human Activity Recognition, Machine Learning, Deep Learning, Mobile Health

Education

Ph.D., Computer Science, Northwestern University 2017 - 2021

M.S., Computer Science, Northwestern University 2015 - 2017

M.Eng., S.B., Electrical Engineering, Harbin Institute of Technology 2008 - 2014

Work Experience

Research Assistant, HABitsLab, Northwestern University, Evanston, IL 2016 - Present

Machine Learning Intern, OPPO Research Institute, Palo Alto, CA Jul - Sep, 2019

Intern, DJI Technology Co., Shenzhen Jun - Jul, 2015

Trainee, Eaton Corp., Global Research & Technology, Shanghai 2014 - 2015

Research Assistant, Eaton Corp., Global Research & Technology, Shanghai 2012 - 2014

Publications

Journal Papers

[1] SyncWISE: Window Induced Shift Estimation for Synchronization of Video and Accelerometry from Wearable Sensors
Yun C. Zhang*, **Shibo Zhang***, Miao Liu, Elyse Daly, Samuel Battalio, Santosh Kumar, Bonnie Spring, James M. Rehg, Nabil Alshurafa (* equal contribution)
Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. (IMWUT/UbiComp) 4.3 (Sept. 2020). 2020. DOI: 10.1145/3411824

[2] NeckSense: A Multi-Sensor Necklace for Detecting Eating Activities in Free-Living Conditions **(Best Presentation Award Runner-up at UbiComp)**
Shibo Zhang, Yuqi Zhao, Dzung Tri Nguyen, Runsheng Xu, Sougata Sen, Josiah Hester, Nabil Alshurafa
Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. (IMWUT/UbiComp) 4.2 (June 2020). 2020. DOI: 10.1145/3397313

[3] Deep Learning Algorithms for Bearing Fault Diagnostics—A Comprehensive Review
Shen Zhang, **Shibo Zhang**, Bingnan Wang, Thomas. G. Habetler
IEEE Access 8 (2020) pp. 29857–29881. 2020. DOI: 10.1109/ACCESS.2020.2972859

[4] micro-Stress EMA: A Passive Sensing Framework for Detecting In-the-wild Stress in Pregnant Mothers **(Distinguished Paper Award)**
Zachary D. King, Judith Moskowitz, Begum Egilmez, **Shibo Zhang**, Lida Zhang, Michael Bass, John Rogers, Roozbeh Ghaffari, Laurie Wakschlag, Nabil Alshurafa
Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. (IMWUT/UbiComp) 3.3 (Sept. 2019). ACM, 2019. DOI: 10.1145/3351249

[5] I Sense Overeating: Motif-based Machine Learning Framework to Detect Overeating Using Wrist-worn Sensing
Shibo Zhang, William Stogin, Nabil Alshurafa
Information Fusion 41 (2018) pp. 37–47. 2018. DOI: 10.1016/j.inffus.2017.08.003

Conference Papers

[1] Deep Generative Cross-modal On-body Accelerometer DataSynthesis from Videos
Shibo Zhang, Nabil Alshurafa
Adjunct Proceedings of the 2020 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2020 ACM International Symposium on Wearable Computers (UbiComp/ISWC '20 Adjunct), September 12–16, 2020, Virtual Event, Mexico, 2020. DOI: 10.1145/3410530.3414329

[2] 🏆 VibroScale: Turning Your Smartphone into a Weighing Scale **(Best Poster Award)**
Shibo Zhang, Qiuyang Xu, Sougata Sen, Nabil Alshurafa
Adjunct Proceedings of the 2020 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2020 ACM International Symposium on Wearable Computers (UbiComp/ISWC '20 Adjunct), September 12–16, 2020, Virtual Event, Mexico, 2020. DOI: 10.1145/3410530.3414397

[3] Multiscale Directional Fusion for Depth Map Super Resolution with Denoising
Dan Xu, Xiaopeng Fan, **Shibo Zhang**, Yang Wang, Debin Zhao, Wen Gao
2019 IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP), 2019. DOI: 10.1109/ICASSP.2019.8683638

[4] Estimating Caloric Intake in Bedridden Hospital Patients with Audio and Neck-worn Sensors
Shibo Zhang, Dzung Nguyen, Gan Zhang, Runsheng Xu, Nikolaos Maglaveras, Nabil Alshurafa
2018 IEEE/ACM International Conference on Connected Health: Applications, Systems and Engineering Technologies (CHASE), 2018. DOI: 10.1145/3278576.3278577

[5] HABits Necklace: A Neck-worn Sensor That Captures Eating Related Behavior and More
Shibo Zhang, Dzung Nguyen, Zachary King, Jishnu Pradeep, Nabil Alshurafa
Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers (UbiComp), 2018. DOI: 10.1145/3267305.3267665

[6] When Generalized Eating Detection Machine Learning Models Fail in the Field?
Shibo Zhang, Rawan Alharbi, Matthew Nicholson, Nabil Alshurafa
Proceedings of the 2017 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2017 ACM International Symposium on Wearable Computers (UbiComp Workshops), 2017. DOI: 10.1145/3123024.3124409

[7] 🏆 Food Watch: Detecting and Characterizing Eating Episodes Through Feeding Gestures **(Best Paper Award)**
Shibo Zhang, Rawan Alharbi, William Stogin, Mohamad Pourhomayun, Bonnie Spring, Nabil Alshurafa
Proceedings of the 11th EAI International Conference on Body Area Networks (BodyNets), 2016. DOI: 10.4108/eai.15-12-2016.2267793

Services

Journal Reviewer of IMWUT, JBHI, JMIR, JVC, IEEE Access
Conference Reviewer of ISWC, ICMI, PerCom, BHI, CHI PLAY
Teaching Assistant, EECS 397, 497: Wireless and Mobile Health (mHealth) 2017/2018/2019

Awards

Best Poster Award, UbiComp 2020 (2%)
Best Presentation Award - Audience Choice Tied, Runner-up, UbiComp 2020 (1.3%)
Distinguished Paper Award, IMWUT 2019 (3.7%)
NSF Student Attendance Scholarship 2018
Best Paper Award, ACM BodyNets 2016
Outstanding Undergraduate Thesis Award (3%)

Skills

Programming Language: Python (PyTorch, TensorFlow), Matlab, C/C++, R