

Junyi Zhu - CV

Ph.D. Candidate
MIT Electrical Engineering & Computer Science Department
MIT Computer Science and Artificial Intelligence Lab
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Education

- Massachusetts Institute of Technology, USA** 2017 - now
Ph.D. in Computer Science
MIT EECS Department
MIT Computer Science and Artificial Intelligence Lab
Advisor: Professor Stefanie Mueller
- University of Washington, USA** 2013 - 2017
Bachelor of Science in Electrical Engineering
Department of Electrical & Computer Engineering
Concentrated in Embedded Computing System
Advisor: Professor Joshua R. Smith, Professor Shwetak N. Patel

Full Paper Publications

- [7] **Junyi Zhu**, Jackson Snowden, Joshua Verdejo, Emily Chen, Hamid Ghaednia, Joseph H. Schwab, and Stefanie Mueller. 2021. EIT-kit: An Electrical Impedance Tomography Toolkit for Health and Motion Sensing. In *Proceedings of the 34th Annual ACM Symposium on User Interface Software and Technology (UIST '21)*. ACM.
- [6] **Junyi Zhu**, Yunyi Zhu, Jiaming Cui, Leon Cheng, Jackson Snowden, Mark Chounlakone, Michael Wessely and Stefanie Mueller. 2020. MorphSensor: A 3D Electronic Design Tool for Reforming Sensor Modules. In *Proceedings of the 33rd Annual ACM Symposium on User Interface Software and Technology (UIST '20)*. ACM.
- [5] **Junyi Zhu**, Lotta-Gili Blumberg, Yunyi Zhu, Martin Nisser, Ethan Levi Carlson, Xin Wen, Kevin Shum, Jessica Ayeley Quaye, and Stefanie Mueller. 2020. CurveBoards: Integrating Breadboards into Physical Objects to Prototype Function in the Context of Form. In *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20)*. ACM.
- [4] Martin Nisser, **Junyi Zhu**, Tianye Chen, Katarina Bulovic, Parinya Punpongsanon, Stefanie Mueller. Sequential Support: 3D Printing Dissolvable Support Material for Time-Dependent Mechanisms. In *Proceedings of the Thirteenth International Conference on Tangible, Embedded, and Embodied Interaction (TEI '19)*. ACM.
- [3]  Edward Wang, **Junyi Zhu**, Mohit Jain, Tien-Jui Lee, Elliot Saba, Lama Nachman, and Shwetak N. Patel. 2018. Seismo: Blood Pressure Monitoring using Built-in Smartphone Accelerometer and Camera. In *Proceedings of the 2018 CHI Conference on Human Factors in Computing Systems (CHI '18)*. ACM. **[BEST PAPER NOMINEE]**

- [2] Edward Wang, William Li, **Junyi Zhu**, Rajneil Rana and Shwetak N. Patel. Noninvasive hemoglobin measurement using unmodified smartphone camera and white flash. *2017 39th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC)*, Seogwipo, 2017.
- [1] Edward Wang, **Junyi Zhu**, William Li, Rajneil Rana, and Shwetak Patel. 2017. HemaApp IR: noninvasive hemoglobin measurement using unmodified smartphone cameras and built-in LEDs. In *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 '17)*. ACM.

Demonstrations & Extended Abstracts

- [3] **Junyi Zhu**, Jackson Snowden, Joshua Verdejo, Emily Chen, Hamid Ghaednia, Joseph H. Schwab, and Stefanie Mueller. 2021. EIT-kit Demo: An Electrical Impedance Tomography Toolkit for Health and Motion Sensing. In *Adjunct Publication of the 34th Annual ACM Symposium on User Interface Software and Technology (UIST '21)*. ACM.
- [2] **Junyi Zhu**, Yunyi Zhu, Jiaming Cui, Leon Cheng, Jackson Snowden, Mark Chounlakone, Michael Wessely and Stefanie Mueller. 2020. Demonstration of MorphSensor: A 3D Electronic Design Tool for Reforming Sensor Modules. In *Adjunct Publication of the 33rd Annual ACM Symposium on User Interface Software and Technology (UIST '20)*. ACM.
- [1] **Junyi Zhu**, Lotta-Gili Blumberg, Yunyi Zhu, Martin Nisser, Ethan Levi Carlson, Xin Wen, Kevin Shum, Jessica Ayeley Quaye, and Stefanie Mueller. 2020. CurveBoards Demo: Integrating Breadboards into Physical Objects to Prototype Function in the Context of Form. In *Extended Abstracts of the 2020 CHI Conference on Human Factors in Computing Systems (CHI EA '20)*. ACM.

Conference Service

Associate Chair

ACM CHI Late Breaking Work 2021

Reviewer

ACM CHI 2020, 2021
 ACM UIST 2020, 2021
 ACM TEI 2020
 ACM IMWUT 2020
 ACM ISS 2020

Volunteering

ACM CHI Student Volunteer 2020
 ACM CHI Program Committee Meeting, Subcommittee Chair Assistant 2019

Research Internships

UW Ubicomp Lab, University of Washington 2016 - 2017
 Research Assistant, Paul G. Allen School of Computer Science & Engineering
 Advisor: Professor Shwetak Patel

UW SEAL Lab, University of Washington 2016
Research Assistant, Department of Electrical & Computer Engineering
Advisor: Professor Alexander V. Mamishev

Exposure Sciences Group, University of Washington 2016
Research Assistant, School of Public Health
Advisor: Professor Edmund Seto

Work Experience

Senosis Health, Seattle, USA 2016 - 2017
Software Engineer, supervisor: Mike Clarke

Jiangsu SEUIC Technology Co., Ltd, China 2015
Software Engineer, supervisor: Prof. Chen Hu (Southeast University, China)

Invited Talks

University of Chicago, Human Computer Integration Lab. *Towards More Personal Health Sensing Devices*, hosted by Prof. Pedro Lopes 2021

MIT, MIT Nano Explorations. *Integrating Object Form and Electronic Function in Rapid Prototyping and Personal Fabrication*, hosted by Prof. Vladimir Bulović 2020

Harvard University, Graduate School of Design, hosted by Prof. Krzysztof Wodiczko 2018

Awards and Honors

Thomas Stockham Jr. Fellowship (\$90000), MIT, 2021 - 2022

Frederick C. Hennie III Teaching Award (\$2200), MIT EECS Department, 2021

Best Paper Nominee, ACM CHI 2018

Seneff-Zue Computer Science Fellowship Award (\$41353), MIT, 2017 - 2018

Dean's List, University of Washington, 2013 - 2017

Selected Press

MIT News. Making health and motion sensing devices more personal. 2021

Yahoo Finance, MIT's toolkit lets anyone design their own muscle-sensing wearables. 2021

MIT News. A hands-on class responds to Covid. 2021

MIT News. Electronic design tool morphs interactive objects. 2020

MIT News. Integrating Electronics onto Physical Prototypes. 2020

Hackster.io. Prototype Like a Pro. 2020

3D Printing Industry. MIT RESEARCHERS DEVELOP NOVEL 3D DESIGN SOFTWARE FOR EM-BEDDED ELECTRONICS. 2020

UW ECE Spotlight. ECE alum Junyi Zhu integrates electronics onto physical prototypes at MIT with "CurveBoards". 2020

ACM TechNews. 3D-printed CurveBoards enable easier testing of circuit design on products. 2020

Inverse. TIRED: BREADBOARDS. WIRED: CURVEBOARDS. 2020

GeekWire. Google buys Seattle health monitoring startup Senosis, bolstering digital health push 2017

MIT Technology Review. How to make a smart phone detect anemia. 2016

Mentoring

All students are co-advised with Prof. Stefanie Mueller.

Master thesis

[1]	Lotta G. Blumberg	2018 - 2019
[2]	Joshua Verdejo	2020 - 2021

Research project students (SuperUROPs, UROPs)

[16]	Zipei Tan	2021	[8]	Jessica Ayeley Quaye	2019
[15]	Sloke Shrestha	2021	[7]	Ethan Levi Carlson	2019
[14]	Emily Chen	2021	[6]	Xin Wen	2019
[13]	Gila R Schein	2020	[5]	Kevin Shum	2019
[12]	Jenny Chen	2020	[4]	Leon Cheng	2019-2020
[11]	Jackson Snowden	2020	[3]	Yunyi Zhu	2018-2020
[10]	Jiaming Cui	2019-2020	[2]	Katharina Bulovic	2018
[9]	Mark Chounlakone	2019	[1]	Tianye Chen	2018

Teaching

Co-Instructor

[1]	6.810	Engineering Interactive Technologies, MIT	Autumn 2021
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Teaching Assistant

[5]	6.810	Engineering Interactive Technologies, MIT	Autumn 2020
[4]	6.810	Engineering Interactive Technologies, MIT	Autumn 2018
[3]	CSE/EE 474	Introduction to Embedded Systems, UW	Autumn 2016
[2]	CSE/EE 472	Introduction to Embedded Systems, UW	Summer 2016
[1]	CSE/EE 371	Design of Digital Circuits and Systems, UW	Spring 2016

Lectures

6.810	Engineering Interactive Technologies, Health Sensing, MIT	Autumn 2020
6.810	Engineering Interactive Technologies, Computer Vision Workshop, MIT	Autumn 2018

References

Stefanie Mueller

Associate Professor, MIT EECS/MechE
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Cambridge, MA 02139, USA

Joseph H. Schwab, M.D.

Associate Professor, Harvard Medical School
Department of Orthopaedic Surgery, MGH
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Shwetak N. Patel

Professor, University of Washington
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Seattle, WA 98195-2350, USA

Edward Jay Wang

Assistant Professor, UC San Diego
Electrical and Computer Engineering department
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La Jolla, CA 92039, USA