SHUYI SUN, Ph.D.

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Education

2020–2025 **University of California, Davis**, *Ph.D.*, Davis, CA.
Computer Science Engineering

2015–2019 **Georgia Institute of Technology**, *BS*, Atlanta, GA.
Computer Science [Media and People]

Technical Skills

Electronics Prototyping.
- 3D Modeling
- 3D Printing
- Sewing & Embroidery
- Laser Cutting
- Silicone Molding
- Resin Crafts

Programming.
- Python
- Java
- Web UI Development
- HTML,CSS,JavaScript
- C, C++, C#
- Arduino, CircuitPython

Creativity and Productivity.
- Deep learning
- Machine Learning
- Google Firebase
- Embrilliance
- Autodesk Software
- LaTeX

Languages

English (Native and Trilingual Proficiency)

Chinese (Native and Trilingual Proficiency)

Japanese (Trilingual Proficiency)

Korean (Elementary proficiency)

Arts Creativity

Over 15 years training and practicing on Procreate & Digital Art, Charcoal Drawing, and Acrylic Painting.

Work Experiences

2020-2025 **Graduate Researcher**, *Interactive Organisms Lab (IO Lab)*, University of California, Davis. Conducting research in: Wearability factors for body-Worn colorimetric biosensors; Biosensors for metabolic monitoring; Animal biosensing computing; Designing microfluidic fingernails and integrating chemical detection, etc. Prototyping and integrating AI models into ubiquitous computing. Assisting the lab in hosting symposiums and academic events.

2023 **Instructor**, *Intro to Programming*, University of California, Davis.

2022 **Instructor**, *Web Programming*, University of California, Davis.

2021 **Lead Teaching Assistant**, *Coding for Designers*, University of California, Davis.

2019-2020 **Research Assistant**, *TriM Lab*, Virginia Polytechnic Institute. Conduct independent research in addition to aiding advisors in lab projects, lab management, and logistics. Assist the lab in hosting symposiums and academic events.

2018-2019 **Teaching Assistant**, *Prototyping Intelligent Appliances*, Georgia Institute of Technology. Held office hours to help students with workshops and projects, graded and logged student work, wrote guidelines for future TAs of the course, and assisted the professor in course planning.

Publications & Conference Presentations

2025 **pawH: Colorimetric pH-Sensing Toys for Non-Invasive Pet Health Monitoring**, https://doi.org/10.1145/3715336.3735768.
Shuyi Sun, Yuan-Hao Ku, and Katia Vega. (DIS '25) In Designing Interactive Systems Conference (DIS '25), July 05–09, 2025, Funchal, Portugal. Association for Computing Machinery, New York, NY, USA 15 Pages.

2025 **Nail pHolish: Integrating Chemical Detection into Cosmetic Fingernail Products**.
Shuyi Sun, Dana Mayfield, Jinho Yon, Yuan-Hao Ku, and Katia Vega. (INTERACT '25) In Proceedings of the 2025 ACM 20th IFIP TC13 International Conference on Human-Computer Interaction

2025 **ChromaLipSense: Designing a Lipstick-Based Biosensors for Metabolic Monitoring**.
Sun, S., Ku, Y. H., Suk, J. Y., Yetisen, A. K., Vega, K. (2025). The Design Journal. (Accepted for publication)

2024 **Wearability Factors for Body-Worn Colorimetric Biosensors**, **Best Demo Award on Conference Presentation**, https://doi.org/10.1145/3675094.3678486.
Sun, S., Yetisen, A., & Vega, K. (2024, October). In Companion of the 2024 on ACM International Joint Conference on Pervasive and Ubiquitous Computing (pp. 944-951).

2024 **BioCosMe: Lip-based Cosmetics with Colorimetric Biosensors for Salivary Analysis using Deep Learning**, https://doi.org/10.1145/3675095.3676610.
Sun, S., Ku, Y. H., Unsihuay, N., Florez, O., Suk, J. Y., Yetisen, A. K., & Vega, K. (2024, October). In Proceedings of the 2024 ACM International Symposium on Wearable Computers (pp. 32-39).

2024 **ChromaLipSense: Lipstick-Based Biosensors for Metabolic Monitoring**.
Sun, S., Kua, Y. H., Suk, J. Y., Yetisen, A. K., Vega, K. (2024). In WEARABLES COLLECTIVE (WC '24), March 25-26, 2024.

2024 **GluCAT: A Feline Biofluids IoT Hub for Electrochemical Glucose Biosensing**, https://doi.org/10.1145/3623509.3635250.
Sun, S., Reagan, K., Seker, E., & Vega, K. (2024, February). In Proceedings of the Eighteenth International Conference on Tangible, Embedded, and Embodied Interaction (pp. 1-7).

2023 **cirCAT: PURRtentio: a Litter Box that Monitors Feline Urine using Electrochemical Biosensors**, https://doi.org/10.1145/3637882.3637887.
Sun, S., Vega, G., Reagan, K., Seker, E., & Vega, K. (2023, December). In Proceedings of the Tenth International Conference on Animal-Computer Interaction (pp. 1-13).

2023 **PURRtentio: Implementing a Smart Litter Box for Feline Urinalysis with Electrochemical Biosensors**, https://doi.org/10.1145/3586182.3615820.
Sun, S., Vega, G., Seker, E., Reagan, K., & Vega, K. (2023, October). In Adjunct Proceedings of the 36th Annual ACM Symposium on User Interface Software and Technology (pp. 1-3).

2023 **BioSparks: Jewelry as Electrochemical Sweat Biosensors with Modular, Repurposing and Interchangeable Approaches**, https://doi.org/10.1145/3594739.3610787.
Sun, S., Ruiz, A., Pirmoradi, S., & Vega, K. (2023, October). In Adjunct Proceedings of the 2023 ACM International Joint Conference on Pervasive and Ubiquitous Computing & the 2023 ACM International Symposium on Wearable Computing (pp. 315-320).

2021 **WOOFlex: A Wearable Device to Aid Canine Flexibility Exercises**, https://doi.org/10.1145/3493842.3493903.
Sun, S., Vega, G., Marcellin-Little, D., & Vega, K. (2021, November). In Proceedings of the Eight International Conference on Animal-Computer Interaction (pp. 1-4).

2021 **GemiN' I: Seamless Skin Interfaces Aiding Communication through Unconscious Behaviors**, **Best Demo Award on Conference Presentation**, https://doi.org/10.1145/3410531.3414298.
Sun, S., Deshmukh, N., Chen, X., Wang, H. C., & Vega, K. (2021, February). In Proceedings of the Augmented Humans International Conference 2021 (pp. 277-279).

2018 **Technology for Working Dogs**, https://doi.org/10.1145/3295598.3295615.
Jackson, M. M., Byrne, C., Freil, L., Valentin, G., Zuerndorfer, J., Zeagler, C., ... & Starner, T. (2018, December). In Proceedings of the Fifth International Conference on Animal-Computer Interaction (pp. 1-5).

Research Projects in Process

2025 **DiabetiCAT: Animal Biosensing Computing with Feline Urine Glucose Biosensing and Hydration Monitoring**, *Shuyi Sun, Jinho Yon, Xingda Chen, Krystle Reagan, and Katia Vega*.

2024 **Lab-on-a-nail: Designing Microfluidic Fingernails through a Women-Centered Approach**, *Shuyi Sun, Dana Mayfield, Yuan-Hao Ku, and Katia Vega*.

Honors & Awards

2024 **Best Demo Award**, *Wearability Factors for Body-Worn Colorimetric Biosensors, ACM International Joint Conference on Pervasive and Ubiquitous Computing.*

2021 **Best Demo Award**, *GemiN' I: Seamless Skin Interfaces Aiding Communication through Unconscious Behaviors, The Augmented Humans (AHs) International Conference.*

2019 **Graduate with Honor**, *Georgia Institute of Technology, May 2019.*

Professional Activities

2021 **Chair, Gadget Show**, *ACM International Symposium on Wearable Computers, September 21–26, 2021.*

2019 **VR Viewfinder: The Effects of Enabling Third-person Perspectives for Bystanders on VR-based Interactive Media**, *CHI Workshop, 2019.*

2018 **Student Leader**, *ACI '18: Proceedings of the Fifth International Conference on Animal-Computer Interaction.*

Volunteer and Community Services

2024 **Volunteer**, *UbiComp '24 and ISWC 2024: ACM International Joint Conference on Pervasive and Ubiquitous Computing.*

2023 **Volunteer**, *The Tenth International Conference on Animal-Computer Interaction.*

2021 **Volunteer**, *ACM International Symposium on Wearable Computers.*

2018-2019 **Health And Wellbeing Liaison**, *The Campus Kitchens Project, Social Services, Georgia Institute of Technology.*

2015-2018 **Shift Captain**, *The Campus Kitchens Project, Social Services, Georgia Institute of Technology.*

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