Suranga NANAYAKKARA

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PROFESSIONAL EXPERIENCE

Associate Professor **2018 - Present**
Auckland Bioengineering Institute, University of Auckland.

Tan Chin Tuan Exchange Fellow **2019**
School of Computer Science and Engineering, Nanyang Technological University.

Assistant Professor **2011 - 2018**
Engineering Product Development Pillar, Singapore University of Technology and Design.

Founder **2016- Present**
DL@SL initiative, Sri Lanka.

Co-Founder & Director **2017- Present**
ZuZu Labs, Pte Ltd., Singapore.

Co-Founder & Director **2016- Present**
Cyrup, Pte Ltd., Singapore.

Academic Advisor **2014- Present**
CreateLab, Pte Ltd., Singapore.

External Examiner **2013 - 2018**
Automation & Mechatronic Systems Course, Ngee Ann Polytechnic, Singapore.

Consultant **2015 - 2016**
David Peiris Group, Sri Lanka.

Associate Faculty **2012 - 2014**
School of Science and Technology, SIM University, Singapore.

Visiting Assistant Professor **2011-2012**
Fluid Interfaces Group, MIT Media Lab. Collaborated with Prof. Pattie Maes

Research Fellow **2011**
Interactive and Digital Media Institute, National University of Singapore. Advised by Prof. Lonce Wyse.

Postdoctoral Associate **2010-2011**
Fluid Interfaces Group, MIT Media Lab. Advised by Prof. Pattie Maes.

Research Engineer **2009-2010**
Marine Mammal Research Laboratory, National University of Singapore.

EDUCATION

Ph.D., Engineering **2005 - 2009**
Department of Electrical & Computer Engineering, National University of Singapore.
Completed a 6-month research attachment at the Music Computation and Cognition (MuCoaCo) Laboratory, University of Southern California. Advised by Prof. Elaine Chew
Thesis: Enhancing Musical Experience for the Hearing-impaired using Visual and Haptic Feedback
Advisors: Dr. Elizabeth Taylor, Prof Lonce Wyse, Prof Ong Sim Heng

BEng. (*1st class honours*) **2001 - 2005**
Department of Electrical & Computer Engineering, National University of Singapore.
Completed a one semester Student Exchange Program at University of Birmingham, UK.
Field of Specialisation: Electrical & Computer Engineering

G.C.E. Advanced Level **2000**
Royal College, Colombo 7, Sri Lanka. Obtained the countrywide 5th rank out of 180,000 candidates

HONORS & AWARDS

Peoples choice award of Discovery video competition by Royal Society Te Aprangi **2018**
In recognition of the video of FingerReader.

Finalist, World Changing Ideas Award by FastCompany **2018**
In recognition of the research project FingerReader.

Best Short Paper Award, iWOAR '18 **2018**
In recognition of the research paper Exploring Accelerometer-based Step Detection by using a Wheeled Walking Frame presented at the 5th International Workshop on Sensor-based Activity Recognition and Interaction

Finalist, D&AD Impact Awards by D&AD **2017**
In recognition of the research project FingerReader.

Finalist, Golden Pin Design Awards by Taiwan Design Center **2017**
In recognition of the research project FingerReader.

Best Short Paper Award, AH'17 **2017**
In recognition of the research paper 'InSight: A Systematic Approach to Create Dynamic Human-Controller-Interactions' presented at the 8th Annual Augmented Human International Conference.

Excellence in Research **2016**
Awarded by SUTD, in recognition of research excellence over a period of time with impact in scholarly field, interdisciplinary contributions across fields, broader impact to society, translation to practice, commercialisation, and teaching practice.

INK Fellow **2016**
Awarded by INK, which is India's foremost platform for the exchange of cutting-edge ideas and inspiring stories. Every year, INK identifies the minds that are redefining their field of work, and the world around them.

Most Promising Technology Award **2016**
Awarded for the Project zSense at InnoveFest unBound 2016, South East Asia's largest innovation festival.

Singapore Design Award (Product - Gold Category) **2016**
Awarded for the Project FingerReader by Design Business Chamber Singapore.The Singapore Design Awards (SDA) honours outstanding designers, design students and design practices from across the world and it remains the leading design award in Southeast Asia.

Steve Howard Award for Best Paper, OZCHI'16 **2016**
In recognition of the research paper 'MuSS-Bits: Sensor-Display Blocks for Deaf People to Explore Musical Sounds.' presented at the 27th Annual CHISGI Australian Computer-Human Interaction Conference.

The Ten Outstanding Young Persons of Sri Lanka (TOYP) award **2015**
An award given by Junior Chamber International Sri Lanka for outstanding achievement in Scientific and Technological Development.

Young Innovator under 35 (MIT TR35) award, Asia Pacific region **2014**
An award given by MIT Technology Review for top young innovators under the age of 35.

Best Paper, OZCHI'14 **2014**
In recognition of the research paper 'PaperPixels : A Toolkit to Create Paper-based Displays' presented at the 25th Annual CHISGI Australian Computer-Human Interaction Conference.

Finalist, Singapore Challenge, GYSS'14 **2014**
In recognition of the white paper 'Smart adaptive interfaces for ageing gracefully' submitted to Global Young Scientist Summit 2014.

NUS Research Scholarship **2005-2009**
A full scholarship awarded by the National University of Singapore to pursue Doctoral research.

Most Valuable Player (MVP) of the year **2008**
Awarded in recognition of outstanding contribution towards the promotion of cricket in the National University of Singapore.

Engineering Dean's List of Excellence **2002**
Awarded by National University of Singapore in recognition of the outstanding academic results.

NUS Undergraduate Scholarship **2001-2005**
A full scholarship awarded by the National University of Singapore to pursue undergraduate studies.

Best Student of the College (academic) **2000**
Awarded by Royal College, Sri Lanka in recognition of the best overall academic results in all academic streams in the school and GCE A level Examination results.

PUBLICATIONS

h-index:15 • Citations: 767
Source: Google Scholar (https://scholar.google.com.sg/citations?user=G0JugenpCgwC)

Books

1. **Nanayakkara, S. C.**, Huber, J. and Maes, P. 2018. Assistive Augmentation. Edited volume on Cognitive Science and Technology book series. **Springer** ISBN-10: 9789811064029.

Peer-reviewed Journal Papers & Book Chapters

1. Boldu, R., Dancu, A, Matthies, D. J. C.,Buddhika,T., Siriwardhana, S. and **Nanayakkara, S. C.** 2018. FingerReader2.0: Designing and Evaluating a Wearable Finger-WornCamera to Assist People with Visual Impairments while Shopping. In **Proceedings of the ACM Journal on Interactive, Mobile, Wearable and Ubiquitous Technologies**, 2(3) Article 94.
2. Juan Pablo, J., Fernando, P., Sridhar, P., Withana, A., **Nanayakkara, S. C.**, Steimle, J. and Maes, P. 2016. PostBits: using contextual locations for embedding cloud information in the home. **Personal and Ubiquitous Computing**, 1-14.
3. Petry, B., Huber, J. and**Nanayakkara, S. C.**2018. Scaffolding the Music Listening and Music Making Experience for the Deaf. Assistive Augmentation. Edited volume on Cognitive Science and Technology book series. **Springer**.
4. Shilkrot, R., Huber, J., Steimle, J., **Nanayakkara, S. C.** and Maes, P. 2015. Digital Digits: A Comprehensive Survey of Finger Augmentation Devices. **ACM Computing Survey**, 48 (2), Article 30.
5. Zoran, A., Shilkrot, R., **Nanayakkara, S. C.**, and Paradiso J. 2014. The Hybrid Artisans: A Case Study in Smart Tools. **ACM Transactions on Computer-Human Interaction (ToCHI)**, 21 (3),1–29.
6. **Nanayakkara, S. C.**, Wyse L., Ong, S.H. and Taylor, E. 2013. Enhancing Musical Experience for the Hearing-impaired using Visual and Haptic Inputs. **Human-Computer Interaction**, 28 (2), 115–160.

Peer-reviewed Conference Papers (Long Papers)

1. Elvitigala, S., Matthies, D., J., C., David, L., Weerasinghe, C. and **Nanayakkara, S. C.** 2019. GymSoles: Improving Squats and Dead-Lifts by Visualizing the Users Centre of Pressure. In **Proceedings of the 37th Annual SIGCHI Conference on Human Factors in Computing Systems** (Montreal QC, Canada, May 4–9, 2019). CHI'19. ACM, New York, NY. (To appear).
2. Cascon, P.,G. Matthies, D., J., C., Muthukumarana, S. and **Nanayakkara, S. C.** 2019. ChewIt. An Intraoral Interface for Discreet Interactions. In **Proceedings of the 37th Annual SIGCHI Conference on Human Factors in Computing Systems** (Montreal QC, Canada, May 4–9, 2019). CHI'19. ACM, New York, NY. (To appear).
3. Elvitigala, D.S., Matthies, D.J.C., Dissanayaka, V., Weerasinghe, C. and **Nanayakkara, S. C.**. 2019. 2bit-TactileHand: Evaluating Tactons for On-Body Vibrotactile Displays on the Hand and Wrist. In **Proceedings of the 10th Augmented Human International Conference** (Reims Champagne-Ardenne, France, March 11–12, 2019). AH'19. New York, NY. 3:13:8.
4. Petry, B., Illandara, T., Elvitigala, S. and **Nanayakkara, S. C.** 2018. Supporting Rhythm Activities of Deaf Children using Music-Sensory-Substitution Systems. In **Proceedings of the 36th Annual SIGCHI Conference on Human Factors in Computing Systems** (Montreal QC, Canada, April 21–26, 2018). CHI'18. ACM, New York, NY. Paper No 486.
5. Shi, Y., Zhang, H., Elvitigala, S., Rajapakse, H., Perera, N. T., Glvez, T. V. and **Nanayakkara, S. C.** 2018. GestAKey: Touch Interaction on Individual Keycaps. In **Proceedings of the 36th Annual SIGCHI Conference on Human Factors in Computing Systems** (Montreal QC, Canada, April 21–26, 2015). CHI'18. ACM, New York, NY. Paper No 596.
6. Boldu, R., Dancu, A, Matthies, D. J. C.,Buddhika,T., Siriwardhana, S. and **Nanayakkara, S. C.**2018. FingerReader2.0: Designing and Evaluating a Wearable Finger-WornCamera to Assist People with Visual Impairments while Shopping. In **Proceedings of International Conference on Ubiquitous Computing**(Singapore, October 8–12, 2018). UbiComp'18. ACM, New York, NY, (to appear).
7. Xuhai, X., Dancu, A. Maes, P. and **Nanayakkara, S. C.** 2018. Hand Range Display: Information Always at Hand With A Body-centric Mid-air Display. **In Proceedings of the International Conference on Human-Computer Interaction with Mobile Devices and Services** Mobile HCI '18. ACM, New York, NY, USA, Article 5.

8. Sridhar, P. K., Chan, W. T. S., and **Nanayakkara, S. C.** 2018. Going beyond performance scores: understanding cognitive-affective states in kindergarteners. **In Proceedings of the 17th ACM Conference on Interaction Design and Children**. (Trondheim, Norway, June 19–22) IDC '18. ACM, New York, NY, USA, 253-265.
9. Rod, J. Collins, D. Ai, Y. Lee, H. and **Nanayakkara, S. C.**2017. UTAP-Unique Topographies for Acoustic Propagation: Designing Algorithmic Waveguides for Sensing in Interactive Malleable Interfaces. In **Proceedings of the 11th International Conference on Tangible, Embedded and Embodied Interactions** (Yokohama, Japan, March 20–23, 2017). TEI'17. ACM, New York, NY, 141-152.
10. Petry, B., Illandara, T. and **Nanayakkara, S. C.** 2016. MuSS-Bits: Sensor-Display Blocks for Deaf People to Explore Musical Sounds. In **Proceedings of the 27th Annual CHISGI Australian Computer-Human Interaction Conference** (Tasmania, Australia, Nov 29– Dec 2, 2016). OZCHI'16. ACM, New York, NY.72–80.[**Best Paper Award**]
11. Ploderer, B., Fong, J., Withana, A., Klaic, M., Nair, S., Crocher, V., Vetere, F. and**Nanayakkara, S. C.** 2016. ArmSleeve: A Patient Monitoring System to Support Occupational Therapists in Stroke Rehabilitation. In **Proceedings of the ACM Conference on on Designing Interactive Systems** (Brisbane, Australia June 4–8, 2016). DIS'16. ACM, New York, NY. 700–711.
12. Shilkrot, R., Huber, J., Wong, M. E., Maes, P. and **Nanayakkara, S. C.** 2015. FingerReader: A Wearable Device to Explore Printed Text on the Go. In **Proceedings of the 33rd Annual SIGCHI Conference on Human Factors in Computing Systems** (Seoul, Korea, April 18–23, 2015). CHI'15. ACM, New York, NY. 2363–2372.
13. Withana, A., Peiris, R., Samarasekara, N., and **Nanayakkara, S. C.** 2015. zSense: Enabling Shallow Depth Gesture Recognition for Greater Input Expressivity on Smart Wearables. In **Proceedings of the 33rd Annual SIGCHI Conference on Human Factors in Computing Systems** (Seoul, Korea, April 18–23, 2015). CHI'15. ACM, New York, NY. 3661–3670.
14. Olberding, S., Steimle J., Nanayakkara, S. and Maes, P. 2015. CloudDrops: Stamp-sized Pervasive Displays for Situated Awareness of Web-based Information. In **Proceedings of International Symposium on Pervasive Displays** (Saarbrcken, Germany, June 10–12, 2015). 47–53.
15. Cortes, J., P., F., Ching, T., H., Wu, C., Chionh, C., Y., **Nanayakkara S. C.**, and Foong, S. 2015. BWard: An Optical Approach for Reliable in-situ Early Blood Leakage Detection at Catheter Extraction Points. In **Proceedings of the 7th IEEE International Conference on Automation and Mechatronics (RAM)** (Angkor Wat, Cambodia, July 1517, 2015), CIS-RAM 2015. IEEE, Piscataway, NJ.
16. Li, T., Raghunath, N., Holtta-Otto, K., Arpak, A., **Nanayakkara, S. C.** and Telenko, C. 2015. Teaching Interdisciplinary Design Between Architecture and Engineering - Finding Common Ground While Retaining Disciplinary Expertise. In **Proceedings of the ASME 2015 International Design Engineering Technical Conferences & Computers and Information in Engineering Conference** (Boston, Massachusetts, August 2-5, 2015). IDETC/CIE 2015. IEEE, Piscataway, NJ. 1–11.
17. Withana, A., Koyama, S., Saakes, D., Kouta Minamizawa, K., Inam, M., and **Nanayakkara, S. C.** 2015. RippleTouch: Initial Exploration of Wave Resonant Based Full Body Haptic Interface. In **Proceedings of the 6th Augmented Human International Conference** (Marina Bay, Singapore, March 9–11, 2015). AH'15. New York, NY. 61–68.
18. Lissermann, R., Huber, J., Hadjakos, A., **Nanayakkara, S. C.** and Mhlhuser, M. 2014. EarPut: Augmenting Ear-worn Devices for Ear-based Interaction. In **Proceedings of the 25th Annual CHISGI Australian Computer-Human Interaction Conference** (Sydney, Australia, December 2–5, 2014). OZCHI'14. ACM, New York, NY. 300–307.
19. Peiris, R. and **Nanayakkara, S. C.** 2014. PaperPixels : A Toolkit to Create Paper-based Displays. In **Proceedings of the 25th Annual CHISGI Australian Computer-Human Interaction Conference** (Sydney, Australia, December 2–5, 2014). OZCHI'14. ACM, New York, NY. 498–504 [**Best Paper Award**].
20. Fan, K., Huber, J., **Nanayakkara, S. C.** and Inami, M. 2014. SpiderVision: Extending the Human Field of View for Augmented Awareness. In **Proceedings of the 5th Augmented Human International Conference** (Kobe, Japan, March 8–9, 2014). AH'14. New York, NY. 1–8.
21. Yeo, K. P., **Nanayakkara, S. C.** and Ransiri, S. 2013. StickEar: Making Everyday Objects Respond to Sound. In **Proceedings of the ACM Symposium on User Interface Software and Technology** (StAndrews, UK, October 8–11, 2013). UIST'13. ACM, New York, NY. 221–226.
22. **Nanayakkara, S. C.**, Shilkrot, R. Yeo, K. P. and Maes, P. 2013. EyeRing: A Finger Worn Input Device for Seamless Interactions with our Surroundings. In **Proceedings of the 4th Augmented Human International Conference** (Stuttgart, Germany, March 8–9, 2013). AH'13. New York, NY. 13–20.

23. **Nanayakkara, S. C.**, Wyse, L., Taylor, E. A. 2012. The Haptic Chair as a Speech Training Aid for the Deaf. In **Proceedings of the 24th Annual CHISGI Australian Computer-Human Interaction Conference** (Melbourne, Australia, November 26–30, 2012). OZCHI'12. ACM, New York, NY. 405–410.
24. **Nanayakkara, S. C.**, Taylor, E., Wyse L. and Ong, S. H. 2009. An enhanced musical experience for the deaf: Design and evaluation of a music display and a haptic chair. In **Proceedings of the 27th Annual SIGCHI Conference on Human Factors in Computing Systems** (Boston, USA, April 4–9, 2009). CHI'09. ACM, New York, NY. 337–346.

Peer-reviewed Conference Papers (Short Papers)

1. Buddhika, T., Zhang, H., Weerasinghe, C., **Nanayakkara, S. C.** and Zimmermann, R. 2019. Prospero: A Personal Wearable Memory Coach. In **Proceedings of the 10th Augmented Human International Conference** (Reims Champagne-Ardenne, France, March 11–12, 2019). AH'19. New York, NY. 26:126:5.
2. Buddhika, T., Zhang, H., Samantha W. T. Chan, Dissanayake, V., **Nanayakkara, S. C.** and Zimmermann, R. 2019. fSense: Unlocking the Dimension of Force for Gestural Interactions Using Smartwatch PPG Sensor. In **Proceedings of the 10th Augmented Human International Conference** (Reims Champagne-Ardenne, France, March 11–12, 2019). AH'19. New York, NY. 11:111:5.
3. Samantha W. T. Chan, Zhang, H., and **Nanayakkara, S. C.**. 2019. fSense: Unlocking the Dimension of Force for Gestural Interactions Using Smartwatch PPG Sensor. In **Proceedings of the 10th Augmented Human International Conference** (Reims Champagne-Ardenne, France, March 11–12, 2019). AH'19. New York, NY. 11:111:5.
4. Matthies, Denys J.C., Haescher, M., **Nanayakkara, S. C.** and Bieber, G. 2018. Step Detection for Rollator Users with Smartwatches. **In Proceedings of the Symposium on Spatial User Interaction** SUI'18. ACM, New York, NY, USA, 163-167.[**Best Paper Award**]
5. Nguyen, N. T., **Nanayakkara, S. C.**, Lee, H. 2018. Visual Field Visualizer: Easier & Scalable way to be Aware of the Visual Field. In **Proceedings of the 9th Augmented Human International Conference** (San Jose, USA, February 7–9, 2018). AH'18. New York, NY. Article No. 31.
6. Shi, Y., Glvez, T. V., Zhang, H. and **Nanayakkara, S. C.** 2017. GestAKey: Get More Done with Just-a-Key on a Keyboard **In Adjunct Publication of the 30th Annual ACM Symposium on User Interface Software and Technology** (Qubec City, Canada, October 22–25, 2017). UIST'17. ACM, New York, NY. 73–75.
7. Boldu, R., Zhang, H., Cortes, J., P., F., Muthukumarana, S. and **Nanayakkara, S. C.**. 2017. InSight: a systematic approach to create dynamic human-controller-interactions. In **Proceedings of the 8th Augmented Human International Conference** (San Jose, USA, March 16–28, 2017). AH'17. New York, NY. Article No. 26. [**Best Paper Award**]
8. Elvitigala, S., Peiris, R., Wilhelm, E., Foong, S. and **Nanayakkara, S. C.**. 2017. GrabAmps: grab a wire to sense the current flow. In **Proceedings of the 8th Augmented Human International Conference** (San Jose, USA, March 16–28, 2017). AH'17. New York, NY. Article No. 30.
9. **Nanayakkara, S. C.**, Schroepfer, T., Wyse, L., Lian, A. and Withana, A. 2017. SonicSG: from floating to sounding pixels. In **Proceedings of the 8th Augmented Human International Conference** (San Jose, USA, March 16–28, 2017). AH'17. New York, NY. Article No. 21.
10. Sridhar, P., **Nanayakkara, S. C.**, and Huber, J. 2017. Towards understanding of play with augmented toys. In **Proceedings of the 8th Augmented Human International Conference** (San Jose, USA, March 16–28, 2017). AH'17. New York, NY. Article No. 22.
11. Sumbul Khan, S., Rajapakse, H., Zhang, H., **Nanayakkara, S. C.**, Tuncer, B., and Blessing, L. 2017. GesCAD: an intuitive interface for conceptual architectural design. In **Proceedings of the 29th Annual CHISGI Australian Computer-Human Interaction Conference** (Brisbane, Australia, Nov 28– Dec 1, 2017). OZCHI'17. ACM, New York, NY. 402–406.
12. Sridhar, P., Petry, B., Pavithren, V. S., Kartolo, A. S. and**Nanayakkara, S. C.**2016. Towards One-Pixel-Displays for Sound Information Visualization. In **Proceedings of the 27th Annual CHISGI Australian Computer-Human Interaction Conference** (Tasmania, Australia, Nov 29– Dec 2, 2016). OZCHI'16. ACM, New York, NY. 91–95.
13. Elvitigala, S., Wessolek, D., Achenbach, A. V., Singhabahu, C. and**Nanayakkara, S. C.**2016. SwimSight: Supporting Deaf Users to Participate in Swimming Games. In **Proceedings of the 27th Annual CHISGI Australian Computer-Human Interaction Conference** (Tasmania, Australia, Nov 29– Dec 2, 2016). OZCHI'16. ACM, New York, NY. 567–570.
14. Fan, K., Seigneur, J. M., Guislain, J.**Nanayakkara, S. C.** and Inami, M. 2016. Augmented Winter Ski with AR HMD. In **Proceedings of the 7th Augmented Human International Conference** (Geneva, Switzerland, February 25–26, 2016). AH'16. New York, NY. Article No. 34.

15. Fan, K., Seigneur, J. M., **Nanayakkara, S. C.** and Inami, M. 2016. Electrosmog Visualization through Augmented Blurry Vision. In **Proceedings of the 7th Augmented Human International Conference** (Geneva, Switzerland, February 25–26, 2016). AH'16. New York, NY. Article No. 35.
16. Peiris, R. L, **Nanayakkara, S. C.**, Wijesinghe, V. and Minamizawa, K. 2014. KineticCanvas: Synergetic Effort Between Art and Technology. In **Proceedings of the 25th Annual CHISGI Australian Computer-Human Interaction Conference** (Melbourne, Australia, December 7–10, 2015). OZCHI'15. ACM, New York, NY. 575–578.
17. Avila, S., Huber, J., Janaka, N., Withana, A., Fernando, P. and **Nanayakkara, S. C.**. 2014. SparKubes: Exploring the Interplay between Digital and Physical Spaces with Minimalistic Interfaces. In **Proceedings of the 25th Annual CHISGI Australian Computer-Human Interaction Conference** (Sydney, Australia, December 2–5, 2014). OZCHI'14. ACM, New York, NY. 204–207.
18. Peiris, R., Janaka, N., De Silva, D. R. and **Nanayakkara, S. C.**. 2014. SHRUG: Stroke Haptic Rehabilitation Using Gaming Interfaces. In **Proceedings of the 25th Annual CHISGI Australian Computer-Human Interaction Conference** (Sydney, Australia, December 2–5, 2014). OZCHI'14. ACM, New York, NY. 380–383.
19. Fernando, P., Peiris, R. and **Nanayakkara, S. C.**. 2014. I-Draw:Towards a Freehand Drawing Assistant. In **Proceedings of the 25th Annual CHISGI Australian Computer-Human Interaction Conference** (Sydney, Australia, December 2–5, 2014). OZCHI'14. ACM, New York, NY. 208–211.
20. Hettiarachchi, A., Premalal, A., Dias, D. and **Nanayakkara, S. C.**. 2014. Towards Context-Aware Just-in-Time Information: Micro-Activity Recognition of Everyday Objects. In **Proceedings of the 25th Annual CHISGI Australian Computer-Human Interaction Conference** (Sydney, Australia, December 2–5, 2014). OZCHI'14. ACM, New York, NY. 422–425.
21. Shilkrot, R., Huber, J., Liu, C. K., Maes, P. and **Nanayakkara, S. C.** 2014. FingerReader: A Wearable Device to Support Text-Reading on the Go. In **Extended Abstracts of the 32nd Annual SIGCHI Conference on Human Factors in Computing Systems** (Toronto, Canada, April 26–May 2, 2014). CHI'14. ACM, New York, NY. 2359–2364.
22. Huber, J., Rekimoto, J., Inami, M., Shilkrot, R., Maes, P. Wong, M. E., Pullin, G. and **Nanayakkara, S. C.**. 2014. Workshop on Assistive Augmentation. Proceedings of the 32nd Annual SIGCHI Conference on Human Factors in Computing Systems (Toronto, Canada, April 26–May 2, 2014). CHI'14. ACM, New York, NY.103–106.
23. Petry, B., Avila, S., **Nanayakkara S. C.** and Foong, S. 2014. 'Birdie: Towards a true flying experience'. In "Workshop on Assistive Augmentation", Extended Abstracts of the 32nd Annual SIGCHI Conference on Human Factors in Computing Systems (Toronto, Canada, April 26–May 2, 2014). CHI'14. ACM, New York, NY.
24. Yeo, K., P. and **Nanayakkara, S. C.** 2013. SpeechPlay: Composing and Sharing Expressive Speech Through Visually Augmented Text. In **Proceedings of the 25th Annual CHISGI Australian Computer-Human Interaction Conference** (Adelaide, Australia, November 25–29, 2013). OZCHI'12. ACM, New York, NY. 565–568.
25. Ransiri, S., Peiris, R., L. A., Yeo, K., P. and **Nanayakkara, S. C.** 2013. SmartFinger: Connecting Devices, Objects and People seamlessly. In **Proceedings of the 25th Annual CHISGI Australian Computer-Human Interaction Conference** (Adelaide, Australia, November 25–29, 2013). OZCHI'12. ACM, New York, NY. 359–362.
26. Yeo, K. P. and **Nanayakkara, S. C.** 2013. StickEar: Augmenting Objects and Places Wherever Whenever. In **Extended Abstracts of the 31st Annual SIGCHI Conference on Human Factors in Computing Systems** (Paris, France, April 27–May 2, 2013). CHI'13. ACM, New York, NY. 751–756.
27. Hettiarachchi, A., **Nanayakkara, S. C.**, Yeo, K. P., Shilkrot, R. and Maes, P. 2013. FingerDraw: More than a Digital Paintbrush. In **Proceedings of the 4th Augmented Human International Conference** (Stuttgart, Germany, March 8–9, 2013). AH'13. New York, NY. 1–4.
28. Ransiri, S. and **Nanayakkara, S. C.** 2013. SmartFinger: An Augmented Finger as a Seamless 'Channel' between Digital and Physical Objects. In **Proceedings of the 4th Augmented Human International Conference** (Stuttgart, Germany, March 8–9, 2013). AH'13. New York, NY. 5–8.
29. Olberding, S., Yeo, K. P., **Nanayakkara, S. C.** and Steimle, J. 2013. AugmentedForearm: Exploring the Design Space of a Display-enhanced Forearm. In **Proceedings of the 4th Augmented Human International Conference** (Stuttgart, Germany, March 8–9, 2013). AH'13. New York, NY. 9–12.

30. Ransiri, S. and **Nanayakkara, S. C.** 2012. WatchMe: Wrist-worn interface that makes remote monitoring seamless. In **Proceedings of the 14th international ACM SIGACCESS conference on Computers and accessibility** (Boulder, Colorado, October 22–24, 2012). ASSETS'12. 243–244.
31. **Nanayakkara, S. C.**, Wyse, L., Taylor, E. A. 2012. Effectiveness of the Haptic Chair in Speech Training. In **Proceedings of the 14th international ACM SIGACCESS conference on Computers and accessibility** (Boulder, Colorado, October 22–24, 2012). ASSETS'12. 235–236.
32. Wyse L., **Nanayakkara, S. C.**, Seekings, P., Ong, S. H. and Taylor, E. 2012. Palm-area sensitivity to vibrotactile stimuli above 1 kHz. In **Proceedings of the 12th International Conference on New Interfaces for Musical Expression** (Ann Arbor, Michigan, May 21–23, 2012). NIME'12. 21–23.
33. **Nanayakkara, S. C.**, Shilkrot, R. and Maes, P. 2012. EyeRing: A Finger-worn Assistant. In **Extended Abstracts of the 30th Annual SIGCHI Conference on Human Factors in Computing Systems** (Austin, Texas, May 5–10, 2012). CHI'12. ACM, New York, NY. 1961–1966.
34. Wyse, L., Mitani, N. and **Nanayakkara, S. C.** 2011. Biases and interaction effects in gestural acquisition of auditory targets using a hand-held device. In **Proceedings of the 23rd Annual CHISGI Australian Computer-Human Interaction Conference** (Canberra, Australia, November 28–December 2, 2011). OZCHI'11. ACM, New York, NY. 315–318.
35. Wyse L., Mitani, N. and **Nanayakkara, S. C.** 2011. The effect of visualizing audio targets in a musical listening and performance task. In **Proceedings of the 11th International Conference on New Interfaces for Musical Expression** (Oslo, Norway, May 30–June 1, 2011). NIME'11. 304–307.
36. **Nanayakkara, S. C.**, Taylor, E., Wyse L. and Ong, S.H. 2007. Towards building an experiential music visualizer. In **Proceedings of the 6th International Conference on Information, Communications and Signal Processing** (Singapore, December 10–13, 2007). ICICS'07. IEEE, Piscataway, NJ. 1–5.
37. **Nanayakkara, S. C.**, Srinivasan. D., Lup, L. W., German, X., Taylor, E. and Ong, S H. 2007. Genetic Algorithm Based Route Planner for Large Urban Street Networks. In **Proceedings of the IEEE Congress on Evolutionary Computation** (Singapore, September 25–28, 2007). CEC'07. IEEE, Piscataway, NJ. 4469-4474.
38. **Nanayakkara, S. C.**, Chitre, M., Ong, S. H. and Taylor, E. 2007. Automatic classification of whistles produced by Indo-Pacific Humpback dolphins (Sousa chinensis). In **Proceedings of the IEEE Oceans Conference** (Aberdeen, Scotland, June 18–21, 2007). Oceans'07. IEEE, Piscataway, NJ. 1–5.

Poster Papers, Demo Papers and Invited Installations

1. Muthukumarana S., Matthies, D.J.C., Weerasinghe, C. Elvitigala, D.S. and **Nanayakkara, S. C.**. 2019. CricketCoach: Towards Creating a Better Awareness of Gripping Forces for Cricketers. In **Posters of the 10th Augmented Human International Conference** (Reims Champagne-Ardenne, France, March 11–12, 2019). AH'19. New York, NY. 42:142:2.
2. Matthies, D.J.C., Elvitigala, D.S., Muthukumarana, S., Huber J., and **Nanayakkara, S. C.**. 2019. CapMat: A Smart Foot Mat for User Authentication. In **Posters of the 10th Augmented Human International Conference** (Reims Champagne-Ardenne, France, March 11–12, 2019). AH'19. New York, NY. 43:143:2.
3. Elvitigala, D.S., Samantha W. T. Chan, Howell, N., Matthies, D.J.C., and **Nanayakkara, S. C.**. 2019. Doodle Daydream: An Interactive Display to Support Playful and Creative Interactions Between Co-workers. In **In Posters of the Symposium on Spatial User Interaction** (Reims Champagne-Ardenne, France, March 11–12, 2019). SUI'18. New York, NY. 186-186.
4. Withana, A., Ransiri, S., Kaluarachchi, T., Singhabahu, C., Yilei, S., Elvitigala, S. and **Nanayakkara, S. C.** 2016. Ultra Low Power Gesture Sensing Based on Selective Volumetric Illumination. **Demos of the ACM Symposium on User Interface Software and Technology** (Tokyo, Japan, October 16–19, 2016). UIST'16. ACM, New York, NY. 139–140.
5. Boldu, R., Manamperi, B., Buddhika, T., Ransiri, S., Shilkrot, R., **Nanayakkara, S. C.** and Maes, P. 2016. FingerReader. **Demos of the of the 27th Annual CHISGI Australian Computer-Human Interaction Conference** (Tasmania, Australia, Nov 29– Dec 2, 2016). OZCHI'16. ACM, New York, NY.
6. Petry, B., Illandara, T, Cortes, J. P. F. and **Nanayakkara, S. C.** 2016. Ad-Hoc Access to Musical Sound for Deaf Individuals. **Posters of the 18th international ACM SIGACCESS conference on Computers and accessibility** (Reno, Nevada, October 24–26, 2016). ASSETS'16. 285–286.
7. **Nanayakkara, S. C.**, Schroepfer, T., Boldu, R., Muthukumarana, S. Withana, A., Lian, A. 2016. RIBbon: Interactive light installation on Read Bridge at Clarke Quay, Singapore. Funded by Singapore River One. Dec 2015-Jan 2016.

8. **Nanayakkara, S. C.**, Schroepfer, T., Wyse, L., Withana, A., Lian, A. 2016. SonicSG: Large-scale interactive sonic light installation in the Singapore River. Funded by **SG50 Celebration Fund**, Dec 2015-Jan 2016.
9. **Nanayakkara, S. C.**, and Yeo, K. P. 2014-2015. StickEar. Invited exhibition at **The Davinci: Shaping the Future** exhibition at Art Science Meseum, Marina Bay Sands, Singapore, Nov 2014-May 2015.
10. **Nanayakkara, S. C.**, Shilkrot, R., Huber, J. and Maes, P. 2014-2015. FingerReader. Invited exhibition at **The Davinci: Shaping the Future** exhibition at Art Science Meseum, Marina Bay Sands, Singapore, Nov 2014-May 2015.
11. Peiris R., Wijesinghe, V. and **Nanayakkara, S. C.** 2015. SHRUG: Stroke Haptic Rehabilitation Using Gaming. **Demos of the 6th Augmented Human International Conference** (Marina Bay, Singapore, March 9–11, 2015). AH'15. New York, NY. 213–214.
12. Huber, J., Malavipathirana, H., Wang, Y., Li, X., Fu, J. C., Maes, P. and **Nanayakkara, S. C.** 2015. Feel & See the Globe: A Thermal, Interactive Installation. **Demos of the 6th Augmented Human International Conference** (Marina Bay, Singapore, March 9–11, 2015). AH'15. New York, NY. 215–216.
13. Yong, K. F., Forero, J. P., Foong, S. and **Nanayakkara, S. C.**2015. FootNote: Designing a Cost Effective Plantar Pressure Monitoring System for Diabetic Foot Ulcer Prevention. **Posters of the 6th Augmented Human International Conference** (Marina Bay, Singapore, March 9–11, 2015). AH'15. New York, NY. 167–168.
14. **Nanayakkara, S. C.**, Schroepfer, T., Withana, A., Peris, R., Huber, J., Wijesinghe, V., Wortmann, T. , Cornelius, A., Khew, Y.N., Lian, A. 2014. Making Sense: Intersecting Lines of Investigation in Design and Technology. Invited exhibition at **National Design Centre** (111 Middle Road,Singapore, 8–30 Nov, 2014).
15. **Nanayakkara, S. C.**, Schroepfer, T., Withana, A., Wortmann, T. , Cornelius, A., Khew, Y.N., Lian, A. 2014. Keepers & Bees: an interactive light-art installation of interactive critters that visitors can interact with in real time via their smartphones. In **Singapore, Archifest 2014** (Keepers: Singapore Designer Collaborative, Orchard Green,Singapore, 26 Sep - 11 October, 2014).
16. **Nanayakkara, S. C.**, Schroepfer, T., Withana, A., Wortmann, T. and Pablo, J.2014. nZwarm: a swarm of luminous sea creatures that interact with passers-by. In **Wellington LUX 2014** (Wellington Waterfront, New Zealand, 22 31 August, 2014).
17. **Nanayakkara, S. C.**, Schroepfer, T., Wortmann, T., Yeo, K. P., Khew, Y. N., Lian, A. and Cornelius, A. 2014. iSwarm: an iterative light installation on the water. In **i Light Marina Bay 2014** (Marina Bay, Singapore, 7 30 March, 2014).
18. Shilkrot, R., Huber, J., Liu, C. K., Maes, P. and **Nanayakkara, S. C.** 2014. A Wearable Text-Reading Device for the Visually-Impaired. In **Videos Track of the 32nd Annual SIGCHI Conference on Human Factors in Computing Systems** (Toronto, Canada, April 26–May 2, 2014). CHI'14. ACM, New York, NY. 193–194.
19. Yeo, K. P., **Nanayakkara, S. C.** and Ransiri, S. 2013. StickEar: Making Everyday Objects Respond to Sound. **Demos of the ACM Symposium on User Interface Software and Technology** (StAndrews, UK, October 8–11, 2013). UIST'13. ACM, New York, NY.
20. **Nanayakkara, S. C.**, Shilkrot, R. and Maes, P. 2012. EyeRing: An Eye on a Finger. In **Interactivity (Research) Track of the 30th Annual SIGCHI Conference on Human Factors in Computing Systems** (Austin, Texas, May 5–10, 2012). CHI'12. ACM, New York, NY.
21. **Nanayakkara, S. C.**, Shilkrot, R. and Maes, P. 2012. EyeRing: An Eye on a Finger. In **Videos Track of the 30th Annual SIGCHI Conference on Human Factors in Computing Systems** (Austin, Texas, May 5–10, 2012). CHI'12. ACM, New York, NY.
22. Mistry, P., **Nanayakkara, S. C.**, and Maes, P. 2011. Touch and Copy, Touch and Paste. In **Interactivity (Research) Track of the 29th Annual SIGCHI Conference on Human Factors in Computing Systems** (Vancouver, Canada, May 7–12, 2011). CHI'11. ACM, New York, NY.
23. Mistry, P., **Nanayakkara, S. C.** and Maes, P. 2011. SPARSH: Passing Data using the Body as a Medium. In **Interactivity Track of the 16th Annual ACM Conference on Computer Supported Cooperative Work** (Hangzhou, China, March 19–23, 2011). CSCW'11. ACM, New York, NY.
24. Mistry, P., **Nanayakkara, S. C.**, and Maes, P. 2011. SPARSH: Touch the Cloud. In **Demonstrations Track of the 16th Annual ACM Conference on Computer Supported Cooperative Work** (Hangzhou, China, March 19–23, 2011). CSCW'11. ACM, New York, NY.
25. Mistry, P., **Nanayakkara, S. C.**, and Maes, P. 2011. SPARSH: Touch the Cloud. In **Videos Track of the 16th Annual ACM Conference on Computer Supported Cooperative Work** (Hangzhou, China, March 19–23, 2011). CSCW'11. ACM, New York, NY.

Miscellaneous

1. Sridhar, P. K. and **Nanayakkara, S. C.**, 2018. Development of a Triangulated Framework Understand Cognitive-Emotional States during Learning in Children. **International Conference of Learning Sciences and Early Childhood Education**. November, 2018.
2. Sridhar, P. K., Quin, Y.W. and **Nanayakkara, S. C.**, 2018. Triangulation of Physiological, Behavioural and Observational Data offers better insights into cognitive-emotional states in learning. **Annual Convention of Association for Psychological Science**. May, 2018.
3. **Nanayakkara, S. C.**, Mishra, A. K. and Mahapatra, D. 2007. Visual attention while watching movies. **IEEE Region 10 Student Paper Contest**. March, 2007.
4. Taylor, E., Chang, A., Yeo, K. P., **Nanayakkara, S. C.** and Watanabe, K. 2006. Study of the ability of Indo-Pacific Humpback dolphins (*Sousa chinensis*) to respond to synthesised dolphin-like whistles (Frequency Modulated or FM tones). **Presented at the 34th Annual Conference of the International Marine Animal Trainers' Association**. November 5–10, 2006.

PATENTS

1. Petry, B., Pablo, J.and **Nanayakkara, S. C.** Muss-bits music-sensory-substitution bits. Singapore Provisional Patent Application: 10201610020P. Filing Date: 29 November 2016.
2. Elvitigala, S., Wessolek, D., Achenbach, A. V., Singhabahu, C. and**Nanayakkara, S. C.**SWIMSIGHT. Singapore Provisional Patent Application: 10201609054W. Filing Date: 28 October 2016.
3. Withana, A., Ransiri, S. and **Nanayakkara S. C.** Gesture Recognition Devices, Gesture Recognition Methods, And Computer Readable Media. US Provisional Patent Application: PCT/SG2015/050479 (second filing). Filing Date: 3 October 2016.
4. Cortes J. P. F, **Nanayakkara S. C.** and Fernando, P. A system and method for providing information for at least one predefined location. Singapore Provisional Patent Application: 10201600342W. Filing Date: 15 January 2016.
5. Cortes J. P. F, **Nanayakkara S. C.** and Foong, S. BWard: An Optical Approach for Reliable in-situ Early Blood Leakage Detection at Catheter Extraction Points. Singapore Provisional Patent Application: WT/EK/ann/S.20151973 (3052/SG). Filing Date: 14 July 2015.
6. Withana, A. and **Nanayakkara S. C.** zSense: A novel technique for close proximity gesture recognition. US Provisional Patent Application: PCT/SG2015/050479. Filing Date: 1 December 2015.
7. Peiris R. L. and **Nanayakkara S. C.** Stroke Haptic Rehabilitation Utilising Gaming. Singapore Provisional Patent Application: IES101930. Filing Date: 27 October 2014.
8. Wilhelm E., **Nanayakkara S. C.**, Shaohui F. and Elvitigala S. StickAmps: just in time intuitive price signals via non-invasive wireless sensors. Singapore Provisional Patent Application:SG4663. Filing Date: 23 May 2014.
9. Peiris R. L. and **Nanayakkara S. C.** A Toolkit that Allows Users to Animate Contents on Paper or Textiles. Singapore Provisional Patent Application: 10201400334Y. Filing Date: 19 March 2014.
10. Taylor, E., **Nanayakkara S. C.**, Wyse, L. L., Ong, S. H., Yeo, K. P. and Tan, G. H. Haptic Chair with Audiovisual Input. US Patent No. US 8,638,966 B2 . January. 28, 2014.
11. Yeo K. P. and **Nanayakkara S. C.** A distributed Wireless Sensing System. US Provisional Patent Application: 61/750,578. Filing Date: 9 January 2013.
12. **Nanayakkara S. C.**, Shilkrot R. and Maes P. EyeRing: A Finger-worn Assistant. US Provisional Patent Application: 61581766. Filing Date: 30 December 2011.
13. Mistry, P., **Nanayakkara S. C.** and Maes, P. Methods and Apparatus for Touch-Based Data Transfer. US Provisional Patent Application: 61408728. Filing Date: 1 November 2010.

INVITED TALKS, LECTURES & PRESENTATIONS

APMEC 2018 **2018**
Plenary Speaker, 15th Asia Pacific Medical Education Conference (APMEC), January, 2018, Singapore.

Sarvodaya-Fusion Awards Ceremony **2017**
Chief Gust & keynote Speaker, Sarvodaya fusion awards, December, 2017, Colombo, Sri Lanka.

YouLead 2017 **2017**
Guest Speaker, Youth Employment and Business Start-up Program (YouLead!), December, 2017, Colombo, Sri Lanka.

IEEE WIE **2017**
Keynote Speaker, IEEE Women in Engineering (WIE) International Leadership Summit, October, 2017, Colombo, Sri Lanka.

INK Conference 2016 **2016**
Selected INK Fellow, "Humanizing Technology", INK Conference 2016, Goa, India.

TEDxYouth@Palmerston 2016 **2016**
Guest Speaker, "Universal Design Enables Everyone", TEDxYouth@Palmerston Event, Palmerston, Australia.

VISUAL SG Forum **2016**
Invited Speaker, "Initial step towards Assistive Augmentation", Visual SG Forum, Science Center, Singapore.

E2 Connect **2016**
Invited Speaker, "Redefine Disability", IT/AT forum about tech adoption for people, SGEnable, Singapore.

SLAAS 2015 **2015**
Guest Speaker, "Wealth Creation through Science", Theme Seminar of the Sri Lanka Association for the Advancement of Science (SLAAS), Sri Lanka

University of Melbourne 2015 **2015**
Speaker, IDL seminar series, "Initial steps towards Assistive Augmentation", The Microsoft Research Centre for Social Natural User Interfaces, University of Melbourne.

IIUPST 2015 **2015**
Keynote: Initial steps towards Assistive Augmentation.

Augmented Human 2015 **2015**
Speaker, Invited panel session, Augmentation and Singularity: The Future of Augmented Human.

CAPT International Student Symposium **2014**
Speaker, Invited panel session, "EyeRing: A Finger Worn Input Device for Seamless Interactions". CAPT International Student Symposium - Design, Technology and Disability Panel, Singapore 2014.

MIT Global Startup Labs **2014**
Invited lecture, "Prototyping and Concept Videos". MIT GSL, Sri Lanka 2014.

University of Colombo, Sri Lanka **2014**
Invited lecture, "Graduate Research Opportunities in HCI". Department of Electronics and Telecommunications Lecture Series.

University of Moratuwa, Sri Lanka **2014**
Invited lecture, "Graduate Research Opportunities in HCI". Department of Computer Science Lecture Series.

Urban Redevelopment Authority, Singapore **2014**
Invited speaker, "Light, Art in Today's context". i Light Symposium 2014.

Instituto Tecnolgico Autnomo de Mxico, Mexico **2013**
Invited Speaker, University Distinguished Lecture Series."Initial Steps Towards Assistive Augmentation".

University of Moratuwa, Sri Lanka **2013**
Invited speaker, "Introduction to Sensory Augmentation". Department of Computer Science Lecture Series.

TechInnovation, Singapore Tech Fair **2012**
Invited speaker, "EyeRing: A Finger-worn Interface". Industry-technology matching event, Singapore.

Australian Computer-Human Interaction Conference, Australia **2012**
Speaker, "FingerDraw: Finger Turned into a Brush Connecting Digital and Physical Worlds". Flash Talk, OZCHI'12.

RESEARCH GRANTS

External

Human Machine Interfaces and Technology Development for Collaborative Control of Unmanned Systems. Funded by Defence Science and Technology Agency (DSTA). Nov 2017–February 2018.
Funded Amount: SGD 200,000
Role: Co-Investigator (30% contribution); PI: Tan U-Xuan

A novel touch-based bilingual intervention to stave off cognitive decline in the elderly: The Dual-Language Intervention in Semantic Memory-Computerised (DISC). Funded by Ministry of Health. April 2017–April 2020.
Funded Amount: SGD 773,558
Role: Co-Investigator (30% contribution). PI: Yow Wei Quin

Research gift from Samsung for Surangas Augmented Human Lab research activities. Funded by Samsung Research America. Nov 2016–Nov 2018.
Funded Amount: SGD 28,386
Role: Principal Investigator (100% contribution)

The FingerReader. Funded by Tote-board Enabling Lives Initiative (TB-ELI). Nov 2016–April 2019.
Funded Amount: SGD 787,862
Role: Principal Investigator (100% contribution)

Language, Cognitive Load, Stress Appraisal and Engineering Design Applications. Funded by Ministry of Education (Tire 1). Dec 2015–Dec 2017.
Funded Amount: SGD 174,742
Role: Co-Investigator (30% contribution). PI: Yow Wei Quin

zSense: zSense:A novel technology to allow shallow depth gesture recognition on smart wearables. Funded by SMART Innovation Grant. Mar 2016–Feb 2017.
Funded Amount: SGD 216,300
Role: Principal Investigator (100% contribution)

Improved Cognitive Performance by Design. Funded by Ministry of Defence (MINDEF), Singapore under DIRP program. Aug 2015–Dec 2018.
Funded Amount: SGD 1,113,700
Role: Principal Investigator (80% contribution); co-PIs: Yow Wei Quin, Hyowon Lee.

Exploration of Object Fingerprint Technology. Funded by NEC, Japan. April 2015–Sep 2015.
Funded Amount: SGD 22,400
Role: Principal Investigator (100% contribution)

zSense: A novel technology to allow shallow depth gesture recognition on smart wearables. Funded by SMART Ignition Grant. June 2015–May 2016.
Funded Amount: SGD 57,600
Role: Principal Investigator (100% contribution)

SCAPE: SeCure ultimAte Payment Experience. Funded by Gilmour Space Corporation. Jan 2015–Sep 2015.
Funded Amount: SGD 60,200
Role: Principal Investigator (100% contribution)

Sonic SG. SG50 Celebration Fund. Ministry of Culture, Community and Youth (MCCY). Jan 2015–Dec 2015.
Funded Amount: SGD 49,000
Role: Principal Investigator (40% contribution); co-PIs: Thomas Schroepfer, Lonce Wyse (NUS).

Personalized and Continuous Rehabilitation via Serious Gaming. Funded by Project GREaT, Media Development Authority. April 2013–Dec 2014.
Funded Amount: SGD 347,500
Role: Co-Investigator (50% contribution); co-PI: Jason Gu

SHRUG: Stroke Haptic Rehabilitation Using Gaming. Funded by Project GREaT, Media Development Authority. Oct 2014–Sept 2017.
Funded Amount: SGD 436,000
Role: Principal Investigator (100% contribution);

Singapore's National Experiment. Funded by National Research Foundation (NRF) of Singapore. Feb 2015–Mar 2015.

Funded Amount: SGD 5,498,684
Role: Co-Investigator (5% contribution), co-PIs: Erik Wilhelm, Nils Tippenhauer, Shaohui Foong, Soh Gim Song, Tan U-Xuan, Clarance Sirisena (SC), Eugene Wambeck (SC), Saminathan Gopal (SC), Mohan Elara, Priji Balakrishnan, Hyungkyoo Kim, Alessandro Romagnoli (NTU), Michel Alexandre Cardin (NUS), Kris Wood

Internal

Design and development of pressure ulcer prevention device customized for Accident & Emergency environment. Funded by SUTD CGH Healthcare Innovation Fund. Jan 2016–Jan 2017.
Funded Amount: SGD 115,500
Role: Principal Investigator (80% contribution); co-PIs: Foong Shaohui, Wong Kok Cheong.

SwimSight (A Device to Enable Swimming Games at National Deaf Games 2016). Funded by SUTD-MIT International Design Centre (IDC). May 20156–Oct 2016.
Funded Amount: SGD 5,520
Role: Principal Investigator (100% contribution)

Gesture Based 3D Modelling Conceptual Architectural Design. Funded by SUTD-MIT International Design Centre (IDC). Oct 2015–Sep 2016.
Funded Amount: SGD 100,000
Role: Co-Investigator (10% contribution), co-PI: Bige Tuncer

The FingerReader. Funded by SUTD-MIT IDC Pinnacle of Design Grant. June 2015–May 2016.
Funded Amount: SGD 95,400
Role: Principal Investigator (100% contribution)

A Flexibe, secure SmartGrid platform and sensor technology. Funded by SUTD-MIT International Design Centre (IDC). Jan 2015–Dec 2015.
Funded Amount: SGD 43,200
Role: Co-Investigator (50% contribution), co-PI: Erik Wilhelm

Design and Development of an in-situ Early Blood Leakage Detection Device. Funded by SUTD CGH Healthcare Innovation Fund. Aug 2014–Feb 2016.
Funded Amount: SGD 93,500
Role: Co-Investigator (40% contribution); co-PIs: Foong Shaohui, Chionh Chang Yin, Ng Chee Yong.

Injury prevention and ambient health monitoring strategies using pervasive wearable interfaces. Funded by Singapore University of Technology and Design, EPD SRG 2011 009. Aug 2011–July 2015.
Funded Amount: SGD 100,000
Role: Principal Investigator (100% contribution)

Designing Multisensory, Intelligent Interfaces for people with Sensory Impairments. Funded by SUTD-MIT International Design Centre (IDC), July 2011–December 2014.
Funded Amount: SGD 794,413
Role: Principal Investigator (90% contribution), co-PI: Pattie Maes (MIT)

Making Sense: Intersecting Lines of Investigation in Design and Technology. Funded by SUTD-MIT International Design Centre (IDC). Oct 2014–Mar 2015.
Funded Amount: SGD 22,107
Role: Co-Investigator (50% contribution), co-PI: Thomas Schroepfer

Upgrade of Audio Recording Studio for Acoustic Research. Funded by SUTD-MIT International Design Centre (IDC) Infrastructure Grant. Oct 2016–Feb 2017.
Funded Amount: SGD 79,422
Role: Co-Investigator (10% contribution), co-PIs: Jer-Ming Chen, Simon Lui, Yow Wei Quin, Ulf Heinrich Bissbort, Ngai-Man Cheung and Hyowon Lee.

The SUTD iDiA Lab mobile app development kit. Funded by SUTD-MIT International Design Centre (IDC) Infrastructure Grant. Aug 2013–Mar 2014.
Funded Amount: SGD 118,620
Role: Co-Investigator (15% contribution), co-PIs: Cheung Ngai-man, Stanley Kok, Jason Gu, Simon Lui, Justin Ruths

Optical Motion Tracking and Capture System. Funded by SUTD-MIT International Design Centre (IDC) Infrastructure Grant. Aug 2013–Mar 2014.
Funded Amount: SGD 400,000
Role: Co-Investigator (5% contribution), co-PIs: Foong Shaohui, Soh Gim Song, Sai Kit Yeung, Yow Wei Quin,

Tan U-Xuan, Mohan Rajesh Elara, Ngai-Man Cheung, Bige Tuncer, Katja Holtta Otto, Ricardo Sosa, Justin Ruths, Chong Keng Hua

Laser Cutters. Funded by SUTD-MIT International Design Centre (IDC) Infrastructure Grant. Oct 2014–Mar 2015.
Funded Amount: SGD 125,000
Role: Co-Investigator (10% contribution), co-PIs: Chen Lujie, Foong Shaohui, Sai Kit Yeung, Tan U-Xuan, Yuen Chau, Sawako Kaijima

TEACHING, ADVISING STUDENTS & RESEARCHERS

Teaching

Assistant Professor, SUTD **2012-2018**
3.007: Introduction to Design. Freshmore level signature course at SUTD. Introduces concepts of design at a variety of scales and through both engineering and architectural design disciplines.

30.101: Systems and Control. Sophomore level course at Engineering Product Development Pillar (EPD), SUTD. Introduces the fundamentals of signal processing and control concepts in physical systems.

Associate Faculty, UniSIM **2013-2018**
MTD205: Audio Technology. Level 2 course at UniSIM. Provides the theoretical foundation on the operation of audio systems as components used in multimedia production, distribution and reproduction.

Teaching Assistant, MIT Media Lab **2012**
MAS672 New Paradigms in Human Computer Interaction. Graduate course at MIT Media Lab. Teaching Assistant to Professor Pattie Maes, Spring 2012.

Tutor, MIT ESG **2012**
18.03 Linear Algebra. Freshmore level course at MIT ESG. Recitation tutor to Dr. Gabrielle Stoy, Spring 2012.

Guest Lectures **2011-Present**
Augmented Human: Assistive Technologies. MAS672 New Paradigms in Human Computer Interaction, Spring 2012.
An Introduction to Empirical Research Methods in Human Computer Interaction, Workshop lecture, Interactive and Digital Media Institute at National University of Singapore, Spring 2011.

Student Supervision

PhD Theses

Samantha Chan **2017-Present**
Auckland Bioengineering Institute, University of Auckland
Thesis Title: TBD

Samitha Elvitigala **2017-Present**
Auckland Bioengineering Institute, University of Auckland
Thesis Title: TBD

Shi Yilei **2015-Present**
Auckland Bioengineering Institute, University of Auckland
Thesis Title: TBD

Priyashri Sridhar **2015-Present**
Engineering Product Development Pillar, Singapore University of Technology and Design
Thesis Title: Towards Development and Evaluation of Tangible Interfaces that Support Learning in Children

Benjamin Petry **2013-2017**
Engineering Product Development Pillar, Singapore University of Technology and Design
Thesis Title: Designing Music-Sensory-Substitution Systems that Support Music-Making for People with Hearing Disabilities
Achievements:

- Best paper award, OZCHI 2016
- Sponsor choice award, UIST student innovation competition
- Best poster presentation, EPD PhD student industrial project poster competition
- Most creative award, Singapore Amazing Flying Machine Competition
- Finalist, Singapore Challenge, GYSS14

MEng Theses

Yvonne Chua **2018-2019**
Auckland Bioengineering Institute, University of Auckland
Thesis Title: Evaluating Immersive Virtual Reality in Primary School Classrooms

Shamanne Siriwardhana **2018-2019**
Auckland Bioengineering Institute, University of Auckland
Thesis Title: Application of Universal Successor Features Based Deep Reinforcement Learning for Target Driven Visual Navigation

Vipula Dissanayake **2018-2019**
Auckland Bioengineering Institute, University of Auckland
Thesis Title: CompRate: Towards Continuous Sensing of Heart Rate and Heart Rate Variability using Built-in Accelerometer of Smart Wearables

Pablo Gallego **2018-2019**
Auckland Bioengineering Institute, University of Auckland
Thesis Title: ChewIt. An Intraoral Interface for Discreet Interactions

Thisum Buddhika **2018-2019**
NTU Masters' Programme
Thesis Title: Expanding Hand Grasp Interactions for Context-Aware Applications

Yong Kin Fuai **2013-2014**
SUTD-MIT Dual Masters' Programme
Thesis Title: Foot.Note: Designing a Cost Effective Plantar Pressure Active Monitoring System for Diabetic Foot Ulcer Prevention

Undergraduate Theses

Wang Xiaofan **2017**
Department of Electrical & Computer Engineering, National University of Singapore
Thesis Title: FingerReader for Language Learning

Lin Weixi **2009**
Department of Electrical & Computer Engineering, National University of Singapore
Thesis Title: Amplitude Modulation of Ultrasound Carrier Wave (Hearing Ultrasound)

Sebastian Tan Yong Yap **2008**
Department of Electrical & Computer Engineering, National University of Singapore
Thesis Title: Sensing Music through Vibrations

Siddharth Jain **2008**
Department of Electrical & Computer Engineering, National University of Singapore
Thesis Title: Visual Representation of Music

Postdoctoral Fellows

Denys J.C. Matthies **2018-Present**
PhD, Universitt Rostock, Rostock, Germany

Haimo Zhang **2016-Present**
PhD, National University of Singapore

Alexandru Dancu **2016-2018**
Chalmers Technical University Gothenburg, Sweden

Anusha Withana **2014-2016**
PhD, Graduate School of Media Design, Keio University, Japan

Daniel Wessolek **2015-2016**
PhD, Bauhaus University Weimar, Germany

Roshan Peiris **2013-2015**
PhD, Department of Electrical & Computer Engineering, National University of Singapore

Jochen Huber **2013-2015**
PhD, Technische Universitat Darmstadt, Germany

Iain Werry **2013-2014**
PhD, Department of Cybernetics, University of Reading, England

Research Engineers

@ Augmented Human Lab, UoA **2018 - Present**
Juan Pablo Forero Corts, Chamod Weerasinghe, Thisum Buddhika.
@ Augmented Human Lab, SUTD **2011 - 2018**
Juan Pablo Forero Corts, Yeo Kian Peen,Piyum Fernando, Santiago Ortega, Thisum Buddhika, Hasitha Rajapakse, Roger Boldu, Attila Victor Achenbach, Shanaka Ransiri

Undergraduate Researchers

@ UoA **2018 - Present**
Joshua Pressman, Alex Woodall, Sze Mun Tan.
@ MIT **2011 - 2012**
Savithru Jayasinghe, Jeff Chen, Kwadwo Nyarko, Yang Chen, Tal Tchwella
@ SUTD **2011 - 2018**
Wang Keren, Seow Chun Yong,Dexter Chew, Kee Bei Jia, Ken Chua, Cheong Li Yang, Ching Tsz Him, Reng yang, Wu chuyi, Xie yaqi, Chen Jiaying, Clara Hannah Goh Mei Ling, Jonathan Ng Ming-En, Sanjay Pushparajan.

Visiting Researchers

MIT Media Lab **2012 - Present**
Pol Pla, Roy Shilkrot, Amit Zoran, Anirudh Sharma
University of Moratuwa **2012 - 2018**
Anuruddha Hettiarachchi, Nipuna Samarasekara, Samitha Elvitigala, Nuwan Janaka, Vikum Wijesinghe, Hasantha Malavipathirana, Akshika Wijesundara, Thavishi Illandara, Tharindu Kaluarachchi, Chanaka Singhabahu, Sachith Muthukumarana, Buddhishan Manamperi, Chamod Weerasinghe, Nuwan Tharaka, Thileepan Beniel.
Nanyang Technical University, Singapore **2018**
Heetesh Alwani
French National University of Civil Aviation **2018**
Loc David
Carleton University, Canada **2018**
Adrian Robertson
University of California, Berkeley **2017**
Noura Howell, Tomas Vega
MIT MISTI Global Leadership Program **2012 - 2016**
Connie Liu, Lynn Takeshita, Ruth E. Park, Jessica A. Fang
Chalmers University of Technology, Sweden **2016**
Christoffer Matsson
ITE College Central, Singapore **2016**
Colin Toh, Fatin Atiqah, Fang Chuxian
Keio University **2014**
Kevin Fan, Tomoya Sasaki
Singapore Polytechnic **2012**
Law Jiali

Competitions

Student Innovation Contest, UIST'14 **2014**
Faculty Advisor for the Team 'SpInformation' who won the Sponsor's Choice Award. Team members: Benjamin Petry, Juan Pablo and Kin Yong.
Microsoft Imagine cup **2012**
Faculty Advisor for the Team 'TechConnect' who was a Semi-finalist. Team memebers: Seow Chun Yong, Madeline Wong, Raymond Te Yeng Jie, Terence Chew Wei Liang

Undergraduate Mentorships

Li Yiyang, Chew Wei-Liang, Lange Gordon Victor, Chia Zhong Ying, Sherman Tan Xian Loong, Chia Wei Yin, Soong Hoe Yan Alex, Zhen Yi, Kai Wen Clement Chua, Yan Yee Jenette Pang, Vanessa Leong, Gan Jin Jye. **2011-Present**

SERVICE

Academic Related Professional & Public Services

Editorial Boards **2013-Present**
Human-Centric Computing and Information Sciences (HCIS) journal.
Augmented Human Research journal.
Advanced Robotics Journal.

Professional Memberships **2009-Present**
Senior Member, Association for Computing Machinery (ACM)
Member, Design Society
President, Lanka Lions Cricket Club, Singapore (LLCC), 2015
Vice-president, Lanka Lions Cricket Club, Singapore (LLCC), 2012-2015
Secretary, Lanka Lions Cricket Club, Singapore (LLCC), 2010

Conference Organization: Chairing **2014-Present**
Steering Committee Member, Augmented Human International Conference (AH)| Technical Program Co-Chair, AH'17 | General Co-Chair, AH'15| Chair, CHI'14 workshop on Assistive Augmentation

Conference Organization: Program Committees **2012-Present**
CHI'18 | OZCHI'18 | ACM HAI'16 | ACM MM'16 Demo | CHI'15 WIP | OZCHI'14 | AH'14 | OZCHI'13 | OZCHI'12 | Mai-I 2013

Conference Organization: Organising Committees **2007-Present**
Spatial Audio for Mobile Devices Workshop in conjunction with MobileHCI'07

Services as a Reviewer **2010-Present**
ACM MM'17 AH'17 ||CHI'17 | OZCHI'16 | CIS-RAM'15| CHI'14 | OZCHI'14 | Mobile HCI'14 | IEEE TLT| ACM TIIS | OZCHI'13 | CHI'13 | AH'13 | DIS'12 | APCHI'12| OZCHI'12 | ICEC'10 | IEEE VR'10

External Services: Volunteering & Mentoring **2000-Present**
Advisor, Singapore Sri Lanka Business Association (SSLBA), 2017
Mentor, Velocity entrepreneurial development programme at University of Auckland, 2017
Judge, National Junior College (NJC) Future Challenge Competition, 2011
Mentor, SUTD Technology and Design Challenge, 2011
Volunteer, Dr.Reijntjes School for the Deaf in Moratuwa, Sri Lanka
Volunteer, National Council for the Deaf, Sri Lanka

Internal Services

2018-Present

University of Auckland

Networking & External Engagements Committee
Member of the External Engagements Committee at Auckland Bioengineering Institute.

Executive Committee **2018-Present**
Member of the Auckland Bioengineering Institute's executive committee where high level matters of the institute are discussed.

2012-Present

Singapore University of Technology & Design (SUTD)

SUTD Internal Review Board (IRB)
Pioneering member of setting up the SUTD Internal Review Board committee. Served in the board for more than 4 years (such appointments are typically for 2 years).

EPD Budget Committee **2013-2014**
Lead the EPD budget committee. Coordinated EPD budget requests, worked closely with the committee members, EPD associate director to make recommendations to the EPD Pillar head.

EPD Entertainment &Awards Committee **2013-2014**
Member of the EPD Entertainment and Awards committee. Worked closely with the team to figure out the mission of the committee. Worked with the EPD faculty to consolidate a list of potential awards for EPD faculty members.

Hostel Fellow at 6-degrees **2011-2015**
Pioneering member of setting up the residential mentors program at SUTD Student hostel.
Hostel fellow of the Green Stairways (responsible to 80 undergraduate students) at SUTD 6-degrees hostel.
Lived-in with the students and was available to them 24/7.
Organized various students activities including suppers, BBQs, pre-exam dinners, weekly informal chat sessions.

Cohort room advisor for the 12F07 **2012**

SUTD Students Academic Integrity code **2011**
Contributed to the development of SUTD Students Academic Integrity code during MIT T-T-T program.

SELECTED PRESS

Web

Wired.UK (2018).“Step inside the MIT lab designing new human-computer interfaces”. January 2018.
Echelon (2017).“Making Technology more Humane”. November 2017.
CCTV (2016).“Technology enables people with disabilities”. February 2016.
CNN (2015).“Singapore designers create lights for the deaf and rings for the blind”. November 2015.
WeAreSUTD (2015).“Professor Suranga: The Engineer Dreams”. April 2015.
MSNBC (2014).‘A device that could help the blind read. August 2014.
Forbes (2014).“MIT’s FingerReader Could Make Life Easier For The Blind. July 2014.
Mashable (2014).“FingerReader Is a 3D-Printed Device That Reads Text Aloud to the Blind. July 2014.
Fast Company (2014).“This Decoder Ring Helps The Blind Read Without Braille. July 2014.
Business Insider (2014).“A New Type Of Ring Worn On The Finger Eliminates The Need For The Blind To Learn Braille. July 2014
IFL Science! (2014).“New Finger Device Reads Books To The Blind. July 2014.
Huffington Post (2014).“This Ring Reads Books And Magazines To The Blind. July 2014.
Associated Press (2014).“MIT Finger Device Reads to the Blind in Real Time. July 2014.
Wired (UK) (2014).“3D-printed ring reads out text in real-time for the blind. July 2014.
TechCrunch (2014).“MITs FingerReader Helps The Blind Read With A Swipe Of A Digit. April 2014.
Lianhe Zaobao (2014).“300 Students Unite To Light-up Marina Bay. February 2014.
The Singapore Engineer Magazine (2014).“Interactive lighting experiences at *i Light Marina Bay 2014*. September 2014.
Gizmodo (2014).“This Ring Scans Text And Reads It Aloud For Visually Impaired People”. February 2014.
Discovery News (2014).“Finger Computer Reads Books Aloud”. February 2014.
TIME (2014).“MIT Researchers Design Ring To Help Visually-Impaired People Read”. February 2014.
Daily Mail (2014).“The ring that READS for you: Finger-worn gadget reads aloud when you point at words - and can even translate books”. February 2014.
RazorTV (2013).“Stick-on device helps the deaf to ‘hear’”. May 2013.
Gizmag (2012).“Camera-toting EyeRing could help blind people to ‘see’ objects”. August 2012.
Technology Review (2012). “Augmented Reality, Wrapped Around Your Finger”. August 2012.
Engadget (2012). “EyeRing finger-mounted connected cam captures signs and dollar bills, identifies them with OCR (hands-on)”. April 2012.
National University of Singapore Research Gallery (2009). “New technology to help the deaf enjoy music”. July 2009.
National University of Singapore Research Gallery (2009). “Hearing through sight”. June 2008.

Books, Magazines and Newspapers

Metro Magazine, People to Watch (2018). “How inventor Suranga Nanayakkara is humanising technology.” August, 2018. **Straits Times, Singapore** (2016). “Ring helps people ’see’, thanks to grant”. September 2016.
Bright 2 by Frame Publishers (2015). “Architectural Illumination and Light Installations”. Carmel McNamara. Frame Publishers. ISBN: 9491727419.
Straits Times, Singapore (2014). “Wear this ring to listen what’s written”. August 2014.
Lianhe Zaobao, Singapore (2014). “300 Students Unite To Light-up Marina Bay”. February 2014.
Straits Times, Singapore (2013). “Wireless device lends a listening ear”. May 2013.
Innovation: The magazine of Research & Technology (2010). “New Technology to Help the Hearing Impaired Enjoy Music”. December 2010.
Straits Times, Singapore (2009). “A chair that’s music to deaf ears”. July 2009.
The Island, Sri Lanka (2008). “Haptic Chair hearing for the deaf”. December 2008.

Television and Radio

TVNZ (2018).“The FingerReader”, Sunday Program. August 2018. `https://www.tvnz.co.nz/shows/sunday/innovate---new/the-finger-reader`
BBC (2016).“Horizons”, Sharper Senses: Devices mimicking our natural senses. June 2016. `http://www.bbc.com/specialfeatures/horizonsbusiness/seriessix/sharper-senses/?vid=p03xpgvm`
CCTV (2016).Technology enables people with disabilities. Feb 2016. `http://english.cntv.cn/2016/02/23/VIDEADIxyUqgEQ0Ya9RRn9Pj160223.shtml`
Japanese TV program Gloval vision (2014).“Inventor”, “Global Vision” documentary program. September 2014. BS TwellV World High Definition Television, Inc. `www.twellv.co.jp/minogashi/flv_gv_149_1m.html`
Fox Business News (2014).“Inventor”, “Global Vision” documentary program. September 2014. BS TwellV World High Definition Television, Inc. `www.twellv.co.jp/minogashi/flv_gv_149_1m.html`
Fox Business News (2014). “Wearable device helps you read with your finger”. February 2014.
SUTD Video Series (2012). “Prof Suranga - Against the Odds”. August 2012.
Sri Lanka Rupavahini (2010). “Interview at Adaraneeya Yawwanaya”. April 2010.
RTL,CVB TV (2014).“Der Ring, der lesen kann [The ring that can read]”. August 2014.
Fox 10 (2014).“New Invention: FingerReader”. July 2014.
c|net (2014).“Tomorrow Daily: Reading with Your Finger”. July 2014.
Associated Press).“Seeing-Eye Ring Helps Blind Read With Finger”. July 2014.
Reuters Videos (2014).“A ring that reads text for the blind”. 2014.
RazorTV (2013).“Stick-on device helps the deaf to hear” July 2013.