Curriculum Vitae - Chu Luo - July 20, 2020

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Age: 28

RESEARCH INTEREST

I strive for new discoveries in computer science and mathematics with my unwavering devotion. Currently, I am interested in the following areas:

- Ubiquitous Computing: Smartphone Sensing Systems, Mobile Apps, App Backend
- Software Engineering: Mobile App Testing, Verification
- Multimedia: Mobile Video/Audio-Based Apps
- Artificial Intelligence: Context-Aware Techniques, Mobile App Big Data Analysis
- Discrete Mathematics (only in leisure time): Combinatorics, Graph Theory, Number Theory

WORK EXPERIENCE

Feb. 2020 -	**Research Fellow** (School of Computer Science and Engineering)	Nanyang Technological University
Mar. 2018 - Mar. 2019	**Research Assistant** at CIS (School of Computing & Information Systems) Project: Advanced Models of Online Metalearning in Highly Dynamic Scenarios (sponsored by Samsung)	The University of Melbourne
Dec. 2018 - Jan. 2019	**Visiting Research Assistant** (Department of Electronic Engineering) Project: Inferring IoT Device Types by Mining Network Flows (with Dr. Yong Li)	Tsinghua University
Nov. 2017 - Feb. 2018	**Full-Time Intern** at OTC (Open Source Technology Centre) Project: SoC Thermal Management Using Reinforcement Learning	Intel, Shanghai, China

EDUCATION

Feb. 2017 - Oct. 2019	**Ph. D.** in Computer Science (Transferred In, **Testamur Conferred**) Supervisors: Vassilis Kostakos, Eduardo Velloso, Jorge Goncalves	The University of Melbourne
Apr. 2015 - Sep. 2016	**Ph. D.** in Computer Science (Transferred Out) Supervisors: Vassilis Kostakos, Jorge Goncalves	University of Oulu
Sep. 2013 - Nov. 2014	**M. Sc.** in Software Engineering (with **Distinction**, **Testamur Conferred**)	University of Southampton
Sep. 2009 - Jul. 2013	**B. Eng.** in Software Engineering (**Testamur Conferred**)	Shanghai Jiao Tong University

REFEREES

Prof. Vassilis Kostakos, Email: vassilis.kostakos@unimelb.edu.au

Dr. Jorge Goncalves, Email: jorge.goncalves@unimelb.edu.au

Dr. Eduardo Velloso, Email: eduardo.velloso@unimelb.edu.au

PUBLICATIONS

[36] Yitong Chen, Niels van Berkel, **Chu Luo** et al. 2020. Application of miniaturized near-infrared spectroscopy in pharmaceutical identification. *Smart Health.* **(Accepted)**

[35] Zhanna Sarsenbayeva, Gabriele Marini, Niels van Berkel, **Chu Luo** et al. 2020. Does smartphone use drive our emotions or vice versa? A causal analysis. *Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems (CHI '20).*
URL: https://doi.org/10.1145/3313831.3376163

[34] Theodoros Anagnostopoulos, **Chu Luo** et al. 2020. A multi-agent system for distributed smartphone sensing cycling in smart cities. *Journal of Systems and Information Technology*, Vol. 22 No. 4, pp. 119-134. URL: https://doi.org/10.1108/JSIT-12-2018-0158

[33] **Chu Luo**, Jorge Goncalves, Eduardo Velloso, and Vassilis Kostakos. 2020. A Survey of Context Simulation for Testing Mobile Context-Aware Applications. *ACM Computing Surveys (CSUR)*, 53, 1, Article 21 (February 2020), 39 pages. URL: https://doi.org/10.1145/3372788

[32] Weiwei Jiang, Gabriele Marini, Niels van Berkel, Zhanna Sarsenbayeva, Zheyu Tan, **Chu Luo** et al. 2019. Probing Sucrose Contents in Everyday Drinks Using Miniaturized Near-Infrared Spectroscopy Scanners. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT).* 3, 4: Article 136. URL: https://doi.org/10.1145/3369834

[31] Chaofan Wang, Zhanna Sarsenbayeva, **Chu Luo**, Jorge Goncalves, and Vassilis Kostakos. 2019. Improving Wearable Sensor Data Quality Using Context Markers. *Proc. International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp Adjunct).*
URL: https://doi.org/10.1145/3341162.3349334

[30] **Chu Luo**, Xu Ma, Yanshan Tian, Jorge Goncalves, Eduardo Velloso, and Vassilis Kostakos. 2019. Verifying nondeterministic processes driven by broadcasts on Android. *IEEE 3rd Information Technology, Networking, Electronic and Automation Control Conference (ITNEC)*. URL: https://doi.org/10.1109/ITNEC.2019.8729296

[29] **Chu Luo**, Zewen Xu, Ruining Dong, Jorge Goncalves, Eduardo Velloso, and Vassilis Kostakos. 2019. CamTest: A laboratory testbed for camera-based mobile sensing applications. *Pervasive and Mobile Computing*. URL: https://doi.org/10.1016/j.pmcj.2019.04.001

[28] **Chu Luo** et al. 2019. Energy-Efficient Prediction of Smartphone Unlocking. *Personal and Ubiquitous Computing*. 23, 1, 159-177. URL: https://doi.org/10.1007/s00779-018-01190-0

[27] **Chu Luo**, Xu Ma, Yanshan Tian, Yuehui Zhang, and Zewen Xu. 2018. A Variation of Quicksort for Model Checking with Promela and SPIN. *IEEE International Conference of Safety Produce Informatization (IICSPI)*, 1-6. URL: https://doi.org/10.1109/IICSPI.2018.8690479

[26] Yanshan Tian, Xu Ma, **Chu Luo**, and Yuehui Zhang. 2018. A Testbed for Intelligent Control of Traffic Lights at Pedestrian Crossings on a Road. *Ninth International Conference on Intelligent Control and Information Processing (ICICIP)*, 1-6.
URL: https://doi.org/10.1109/ICICIP.2018.8606678

[25] Xu Ma, Yanshan Tian, **Chu Luo**, and Yuehui Zhang. 2018. Predicting Future Visitors of Restaurants Using Big Data. *2018 International Conference on Machine Learning and Cybernetics (ICMLC)*, 269-274. URL: https://doi.org/10.1109/ICMLC.2018.8526963

[24] Weiwei Jiang, Gabriele Marini, Niels van Berkel, Zhanna Sarsenbayeva, **Chu Luo** et al. 2018. A Mobile Scanner for Probing Liquid Samples in Everyday Settings. *Proceedings of the 2018 ACM International Joint Conference and 2018 International Symposium on Pervasive and Ubiquitous Computing and Wearable Computers*, 1172-1177. URL: https://doi.org/10.1145/3267305.3274764

[23] Huber Flores, Pan Hui, Sasu Tarkoma, Yong Li, Theodoros Anagnostopoulos, Vassilis Kostakos, **Chu Luo**, and Xiang Su. 2018. SensorClone: A Framework for Harnessing Smart Devices with Virtual Sensors. *Proceedings of ACM Multimedia Systems (MMSys 2018)*, Amsterdam Netherlands, June 2018, 328-338. URL: https://doi.org/10.1145/3204949.3204952

[22] Simon Klakegg, Jorge Goncalves, **Chu Luo** et al. 2018. Assisted Medication Management in Elderly Care Using Miniaturised Near-Infrared Spectroscopy. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*. 2, 2, Article 69 (June 2018), 24 pages.
Distinguished Paper Award
URL: https://doi.org/10.1145/3214272

[21] Yu Zhang, Tao Gu, **Chu Luo**, Vassilis Kostakos, Aruna Seneviratne. 2018. FinDroidHR: Smartwatch Gesture Input with Optical Heartrate Monitor. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*. 2, 1, Article 56 (March 2018), 42 pages. URL: https://doi.org/10.1145/3191788

[20] Zhanna Sarsenbayeva, Niels van Berkel, **Chu Luo**, Vassilis Kostakos and Jorge Goncalves. 2017. Challenges of Situational Impairments during Interaction with Mobile Devices. *Proceedings of the 29th Australian Conference on Human-Computer Interaction (OzCHI17),* 477-481.

Honourable Mention Award
URL: https://doi.org/10.1145/3152771.3156161

[19] Simon Klakegg, Niels van Berkel, Aku Visuri, Hanna-Leena Huttunen, Simon Hosio, **Chu Luo**, Jorge Goncalves and Denzil Ferreira. 2017. Designing a Context-Aware Assistive Infrastructure for Elderly Care. *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),* 563-568.
URL: https://doi.org/10.1145/3123024.3124403

[18] **Chu Luo**, Miikka Kuutila, Simon Klakegg, Denzil Ferreira, Huber Flores, Jorge Goncalves, Mika Mäntylä and Vassilis Kostakos. 2017. TestAWARE: A Laboratory-Oriented Testing Tool for Mobile Context-Aware Applications. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT).* 1, 3, Article 80 (September 2017), 29 pages.
URL: https://doi.org/10.1145/3130945

[17] Zhanna Sarsenbayeva, Denzil Ferreira, Niels van Berkel, **Chu Luo**, Mikko Vaisanen, Vassilis Kostakos and Jorge Goncalves. 2017. Vision-Based Happiness Inference: A Feasibility Case-Study. *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),* 494-499.
URL: https://doi.org/10.1145/3123024.3124438

[16] **Chu Luo**, Henri Koski, Mikko Korhonen, Jorge Goncalves, Theodoros Anagnostopoulos, Shin'ichi Konomi, Simon Klakegg and Vassilis Kostakos. 2017. Rapid Clock Synchronisation for Ubiquitous Sensing Services Involving Multiple Smartphones. *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),* 476-481.
URL: https://doi.org/10.1145/3123024.3124432

[15] Aku Visuri, Niels van Berkel, **Chu Luo**, Jorge Goncalves, Denzil Ferreira, Vassilis Kostakos. 2017. Challenges in Quantified-Self: Encouraging Self-Reported Data Logging During Recurrent Smartphone Usage. *Proceedings of the 31st British Human Computer Interaction Conference (BHCI'17).*

[14] Simon Klakegg, Niels van Berkel, Aku Visuri, **Chu Luo**, Jorge Goncalves, Simo Hosio, Hanna-Leena Huttunen, Denzil Ferreira. 2017. Informing Caregivers Through an Assistive Tool: An Investigation of Elderly Care Metrics. *Proceedings of the 31st British Human Computer Interaction Conference (BHCI'17).*

[13] Aku Visuri, Niels van Berkel, Jorge Goncalves, **Chu Luo**, Denzil Ferreira, Vassilis Kostakos. 2017. Predicting Interruptibility for Manual Data Collection: A Cluster-Based User Model. *Proceedings of the 19th International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI'17).* Article 12, 14 pages.
URL: https://doi.org/10.1145/3098279.3098532

[12] Simon Klakegg, Jorge Goncalves, Niels van Berkel, **Chu Luo**, Simo Hosio, Vassilis Kostakos. 2017. Towards Commoditised Near Infrared Spectroscopy. *Proceedings of the ACM SIGCHI Conference on Designing Interactive Systems (DIS'17),* 515-527.
URL: https://doi.org/10.1145/3064663.3064738

[11] Jorge Goncalves, Zhanna Sarsenbayeva, Niels van Berkel, **Chu Luo**, Simo Hosio, Sirkka Rissanen, Hannu Rintamäki and Vassilis Kostakos. 2017. Tapping Task Performance on Smartphones in Cold Temperature. *Interacting with Computers,* 29, 3, 355-367.
URL: http://dx.doi.org/10.1093/iwc/iww029

[10] Denzil Ferreira, Christian Schuss, **Chu Luo**, Jorge Goncalves, Vassilis Kostakos and Timo Rahkonen. 2016. Indoor Light Scavenging on Smartphones. *Proceedings of the 15th International Conference on Mobile and Ubiquitous Multimedia (MUM '16).*
URL: https://doi.org/10.1145/3012709.3017603

[9] Huber Flores, Denzil Ferreira, **Chu Luo**, Vassilis Kostakos, Pan Hui, Rajesh Sharma, Sasu Tarkoma and Yong Li. 2016. Social-aware Device-to-Device Communication: A Contribution for Edge and Fog Computing? *Adjunct Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp '16)*, 1466-1471.
URL: http://dx.doi.org/10.1145/2968219.2968589

[8] **Chu Luo**, Miikka Kuutila, Simon Klakegg, Denzil Ferreira, Huber Flores, Jorge Goncalves, Vassilis Kostakos and Mika Mäntylä. 2016. How to Validate Mobile Crowdsourcing Design? Leveraging Data Integration in Prototype Testing. *Adjunct Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp '16)*, 1448-1453.
URL: http://dx.doi.org/10.1145/2968219.2968586

[7] Simon Klakegg, **Chu Luo**, Jorge Goncalves, Simo Hosio and Vassilis Kostakos. 2016. Instrumenting Smartphones with Portable NIRS. *Adjunct Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp '16)*, 618-623.
URL: http://dx.doi.org/10.1145/2968219.2971590

[6] **Chu Luo**, Angelos Fylakis, Juha Partala, Simon Klakegg, Jorge Goncalves, Kaitai Liang, Tapio Seppänen and Vassilis Kostakos. 2016. A Data Hiding Approach for Sensitive Smartphone Data. *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp '16)*, 557-568.
URL: http://dx.doi.org/10.1145/2971648.2971686

[5] Niels van Berkel, **Chu Luo**, Theodoros Anagnostopoulos, Denzil Ferreira, Jorge Goncalves, Simo Hosio and Vassilis Kostakos. 2016. A Systematic Assessment of Smartphone Usage Gaps. *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*, 4711-4721.
URL: http://dx.doi.org/10.1145/2858036.2858348

[4] Simo Hosio, Denzil Ferreira, Jorge Goncalves, Niels van Berkel, **Chu Luo**, Muzamil Ahmed, Huber Flores and Vassilis Kostakos. 2016. Monetary Assessment of Battery Life on Smartphones. *Proceedings of the 2016 CHI Conference on Human Factors in Computing Systems (CHI '16)*, 1869-1880.
URL: http://dx.doi.org/10.1145/2858036.2858285

[3] Jiyou Li and **Chu Luo**. 2016. The simplified weighted sum function and its average sensitivity. *Information Processing Letters* 116, 5, 331-336.
URL: http://dx.doi.org/10.1016/j.ipl.2016.01.002

[2] Niels van Berkel, **Chu Luo**, Denzil Ferreira, Jorge Goncalves and Vassilis Kostakos. 2015. The

Curse of Quantified-Self: An Endless Quest for Answers. *Adjunct Proceedings of the 2015 ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp '15)*, 973-978.
URL: http://dx.doi.org/10.1145/2800835.2800946

[1] **Chu Luo**. 2014. Video Summarization for Object Tracking in the Internet of Things. *Next Generation Mobile Apps, Services and Technologies (NGMAST), 8th International Conference on.* IEEE.
URL: http://dx.doi.org/10.1109/NGMAST.2014.20

PREPRINT

[4] **Chu Luo** and Yuehui Zhang. 2020. Arranged Forests: Enhancing Random Forests by Reducing Feature Overlap between Trees.
URL: http://dx.doi.org/10.13140/RG.2.2.19763.58403

[3] **Chu Luo**. 2015. A Mathematical Theorem about Northern Europe and Its Proof.
URL: http://dx.doi.org/10.13140/RG.2.1.2026.3121

[2] **Chu Luo**. 2015. Solving a Mathematical Problem in Square War: a Go-like Board Game. arXiv Preprint.
URL: http://arxiv.org/abs/1509.09240

[1] Jiyou Li, **Chu Luo** and Zeying Xu. 2015. The Minimal and Maximal Sensitivity of the Simplified Weighted Sum Function. arXiv Preprint.
URL: http://arxiv.org/abs/1505.00887

TUTORING

- University of Melbourne
  - 2018 Jul. - Mobile Computing Systems Programming (COMP90018)
  - 2017 Jul. - Graphics and Interaction (COMP30019)
  - 2017 Jul. - Mobile Computing Systems Programming (COMP90018)
- ACM Summer School
  - 2017 Jul. - ACM Summer School on Crowdsourcing, Suzhou
- University of Oulu
  - 2016 Jan. - Mobile and Social Computing (521147S)

INVITED TALKS

- 2018 Dec. - Tsinghua University - "Chu Luo Research"
- 2016 Jul. - Ningxia Normal University - "Ubiquitous Computing in Northern Finland"

INVITED LECTURES

- 2017 Nov. - Xi'an Jiaotong-Liverpool University - "Connecting Mobile Big Data: Developing Mobile Apps with Azure"
- 2016 Dec. - Hangzhou Polytechnic - "Ubiquitous Computing in Our Pocket: Smartphone Sensing Technology"

SUPERVISION

- MSc Students
  - Yuan Wang (2018 May.- Nov.)
  - Yitong Chen (2017 Aug.- 2018 Nov.)

PROGRAMMING SKILLS

ActionScript, C, C++, C#, Cg/HLSL, Event-B, Html5, LaTeX, Java, JavaScript, Matlab, Mathematica, PHP, Pine, Promela, Python, R, SQL, UnrealScript

LANGUAGES

Mandarin Chinese: Native Speaker
English: IELTS Overall 7.0, Listening 8.0, Reading 7.0, Writing 7.0, Speaking 6.5
Finnish: Level A1.1

ACADEMIC EVENT SERVICE

- Publicity Chair
  - PerCrowd 2018 (1st International Workshop on Context-Awareness for Multi-Device Pervasive and Mobile Computing)
- Program Committee
  - PerCrowd 2019
  - OzCHI 2019
  - OzCHI 2018 (Australian Conference on Computer-Human Interaction)
- Student Volunteer
  - OzCHI 2018

GRANTS AND SCHOLARSHIPS

- 2018 - Travel Grant, School of Computing and Information Systems, University of Melbourne
- 2017 - Google PhD Travel Scholarship
- 2017 - Travel Grant, School of Engineering, University of Melbourne
- 2017 - Melbourne Research Scholarship (Faculty Scholarship), University of Melbourne

REVIEWING

IEEE Transactions on Mobile Computing, ACM IMWUT, Future Generation Computer Systems, CSCW, Microprocessors and Microsystems, NordiCHI, OzCHI, International Journal of Human-Computer Studies, WWW, UbiComp, DIS, CHI, AMI, PerCom.

CONFERENCES ATTENDED

[8] 30th Australian Conference on Computer-Human Interaction (OzCHI 2018), Melbourne, VIC, Australia, December 04-07, 2018.

[7] ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2017), Maui, Hawaii, USA, September 11-15, 2017.

[6] ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2016), Heidelberg, Germany, September 12-16, 2016.

[5] ACM SIGCHI Conference on Human Factors in Computing Systems (CHI), San Jose, USA, May 07-12, 2016.

[4] ACM International Joint Conference on Pervasive and Ubiquitous Computing (UbiComp 2015), Osaka, Japan, September 07-11, 2015.

[3] 17th International Conference on Human-Computer Interaction with Mobile Devices and Services, Copenhagen, Denmark, August 24-27, 2015.

[2] Algebraic Combinatorics Workshop at University of Science and Technology of China, Hefei, China, November 26-29, 2014.

[1] 8th International Conference on Next Generation Mobile Apps, Services and Technologies (NGMAST2014), Oxford, UK, September 10-12, 2014.

MEDIA MENTIONS

Pursuit: Using AI to make your smartphone smarter (2019) reposted in Futurity: Research News, Phys.Org, CIO Australia

ACM SIGCHI: Summer School On Crowdsourcing At XJTLU (2018)

The Economist: Buddy, can you spare a Watt? (30/4/2016)

ERDŐS NUMBER

4

Jiyou Li and **Chu Luo**. 2016. The simplified weighted sum function and its average sensitivity. *Information Processing Letters* 116, 5, 331-336. URL: http://dx.doi.org/10.1016/j.ipl.2016.01.002

Jiyou Li, David B. Chandler and Qing Xiang. 2010. Permutation polynomials of degree 6 or 7 over finite fields of characteristic 2. *Finite Fields and Their Applications* 16, 6, 406-419.

Richard M. Wilson and Qing Xiang. 1997. Constructions of Hadamard difference sets. *Journal of Combinatorial Theory, Series A* 77, 1, 148-160.

Paul Erdős, Joel C. Fowler, Vera T. Sós and Richard M. Wilson. 1985. On 2-designs. *Journal of Combinatorial Theory, Series A* 38, 2, 131-142.