

# SUN BANGJIE

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## EDUCATION

### National University of Singapore

Ph.D., School of Computing (Current)

Aug 2020 - Present

B.S., School of Computing (First Class Honours)

Aug 2016 - May 2020

## RESEARCH INTERESTS

Interests: **Computer Vision, Sensing and Mobile Systems, and Knowledge-Driven AI**

My research interest lies at the intersection of **computer vision** and **mobile/sensing systems**. Specifically, my research aims to help average users of mobile/sensing systems solve a wide range of practical and real-world problems using only commodity cameras. This includes but not limited to enhancing public safety, verifying product authenticity and protecting individual privacy. Additionally, my research also encompasses knowledge-guided and physics-guided machine and deep learning, with a focus on integrating scientific knowledge to optimize models and transitioning from data-driven to knowledge-driven AI.

## HONORS AND AWARDS

- **Best Poster Award** Jun 2025
  - ACM International Conference on Mobile Systems, Applications, and Services (*MobiSys'25*)
- **Best Paper Award** Jul 2024
  - ACM International Conference on Mobile Systems, Applications, and Services (*MobiSys'24*)
- **Research Achievement Award** Jan 2024
  - Department of Computer Science, School of Computing, National University of Singapore
- **Best Poster Award** Jul 2022
  - ACM International Conference on Mobile Systems, Applications, and Services (*MobiSys'22*)
- **Dean's List** Aug 2017 - May 2018
  - Department of Computer Science, School of Computing, National University of Singapore

## PROFESSIONAL EXPERIENCE

### National University of Singapore, Singapore

Graduate Tutor, Department of Computer Science, School of Computing

Aug 2020 - Present

### PayPal, Singapore

Software Engineer Intern, Risk Infrastructure

May 2018 - Nov 2018

## PUBLICATIONS

Journal and Conference Papers (Listed in reverse chronological order)

Published in **Top Conference [Top Conf]** in:

- **Mobile Systems [Mob]: *MobiSys***
  - **Sensing Systems [Sen]: *SenSys***
  - **Security [Sec]: *USENIX Security***
- [1] **[Top Conf: *Mob*] [*MobiSys'25*] Bangjie Sun**, Mun Choon Chan, and Jun Han. 2025. CAMPrints: Leveraging the “Fingerprints” of Digital Cameras to Combat Image Theft. In The 23rd Annual International Conference on Mobile Systems, Applications and Services (*MobiSys '25*), June 23–27, 2025, Anaheim, CA, USA. ACM, New York, NY, USA, 14 pages. Acceptance Rate: 18.0% (42 of 233). **BEST POSTER AWARD for the poster that accomplishes the paper.**
  - [2] **[Top Conf: *Sec*] [*USENIX Security'24*] Jiang, Nan, Bangjie Sun**, Terence Sim, and Jun Han. “Can I Hear Your Face? Pervasive Attack on Voice Authentication Systems with a Single Face Image.” In 33rd USENIX Security Symposium (*USENIX Security 24*), pp. 1045-1062. 2024. Acceptance Rate: 18.3% (417 of 2276).
  - [3] **[Top Conf: *Mob*] [*MobiSys'24*] Jonghyuk Yun**, Kyoosik Lee, Kichang Lee, Bangjie Sun, Jaeho Jeon, Jeonggil Ko, Inseok Hwang, and Jun Han. 2024. PowDew: Detecting Counterfeit Powdered Food

Products using a Commodity Smartphone. In Proceedings of the 22nd Annual International Conference on Mobile Systems, Applications and Services (MobiSys '24). Association for Computing Machinery, New York, NY, USA, 210–222. Acceptance Rate: 16.3% (43 of 263). **BEST PAPER AWARD**

- [4] **[Top Conf: Sen] [SenSys'23] Bangjie Sun**, Kanav Sabharwal, Gyuyeon Kim, Mun Choon Chan, and Jun Han. 2023. Testing Masks and Air Filters with Your Smartphones. In The 21st ACM Conference on Embedded Networked Sensor Systems (SenSys '23), November 12–17, 2023, Istanbul, Turkiye. ACM, New York, NY, USA, 15 pages. Acceptance Rate: 18.9% (34 of 179).
- [5] **[Top Conf: Mob] [MobiSys'22] Bangjie Sun**, Sean Rui Xiang Tan, Zhiwei Ren, Mun Choon Chan and Jun Han. 2022. Detecting Counterfeit Liquid Food Products in a Sealed Bottle Using a Smartphone Camera. In The 20th Annual International Conference on Mobile Systems, Applications and Services (MobiSys '22), June 25–July 1, 2022, Portland, OR, USA. ACM, New York, NY, USA, 14 pages. Acceptance Rate: 21.6% (38 of 176).
- [6] **[Top Conf: Sen] [SenSys'21] Sriram Sami**, Sean Rui Xiang Tan, **Bangjie Sun**, and Jun Han. 2021. LAPD: Hidden Spy Camera Detection using Smartphone Time-of-Flight Sensors. In Proceedings of the 19th ACM Conference on Embedded Networked Sensor Systems (SenSys '21). Association for Computing Machinery, New York, NY, USA, 288–301. Acceptance Rate: 17.9% (25 of 139).  
*\*Most downloaded paper across all years of ACM SenSys publications until present on ACM DL*  
*\*Top 3<sup>rd</sup> most downloaded paper across all years of ACM SIGMOBILE publications until present on ACM DL*
- [7] **[J. Vis 2020] Michael Burch**, Alberto Veneri, and **Bangjie Sun**. "Exploring eye movement data with image-based clustering." Journal of Visualization 23 (2020): 677-694.
- [8] **[VINCI'19] Michael Burch**, Alberto Veneri, and **Bangjie Sun**. 2019. EyeClouds: A Visualization and Analysis Tool for Exploring Eye Movement Data. In Proceedings of the 12th International Symposium on Visual Information Communication and Interaction (VINCI'19). Association for Computing Machinery, New York, NY, USA, Article 8, 1–8.

#### POSTERS, DEMOS AND INVITED ARTICLES

- [1] **[Invited Article: GetMobile'25] Jonghyuk Yun**, Kyoosik Lee, Kichang Lee, **Bangjie Sun**, Jaeho Jeon, JeongGil Ko, Inseok Hwang, and Jun Han. "A Smartphone to the Rescue: Detecting Counterfeit Powdered Food Products." GetMobile: Mobile Computing and Communications 28, no. 4 (2025): 38-43
- [2] **[Poster Abstract: MobiSys'24] Jonghyuk Yun**, Kyoosik Lee, Kichang Lee, **Bangjie Sun**, Jaeho Jeon, Jeonggil Ko, Inseok Hwang, and Jun Han. "Poster: Towards Counterfeit Powdered Food Products Detection using a Commodity Smartphone." In Proceedings of the 22nd Annual International Conference on Mobile Systems, Applications and Services, pp. 640-641. 2024.
- [3] **[Poster Abstract: MobiSys'22] Bangjie Sun**, Sean Rui Xiang Tan, Zhiwei Ren, Mun Choon Chan, and Jun Han. "On utilizing smartphone cameras to detect counterfeit liquid food products." In Proceedings of the 20th Annual International Conference on Mobile Systems, Applications and Services, pp. 551-552. 2022. **BEST POSTER AWARD**
- [4] **[Poster Abstract: SenSys'21] Sriram Sami**, Sean Rui Xiang Tan, **Bangjie Sun**, and Jun Han. "On Utilizing Smartphone Time-of-Flight Sensors to Detect Hidden Spy Cameras." In Proceedings of the 19th ACM Conference on Embedded Networked Sensor Systems, pp. 384-385. 2021.

#### BACHELORS DISSERTATION

**A Real-time Caustics and Global illumination Rendering Framework with RTX Technology** Apr 2020  
– Committee: Low Kok Lim (Advisor), Huang Zhiyong

#### TEACHING

##### Graduate Tutor

- **Database Systems (CS2102)** *Spring 2023, 2024 and 2025*  
*School of Computing, National University of Singapore*
- **Programming Methodology (CS1101S)** *Fall 2022, 2023 and 2024*  
*School of Computing, National University of Singapore*
- **Software Engineering Project (CS3203)** *Fall 2020, Spring 2021 and 2022*

*School of Computing, National University of Singapore*

**Teaching Assistant / Course Project Mentor**

- **Visual Computing (SWS3026)** *Summer 2023 and 2024*  
Teaching Assistant  
*School of Computing, National University of Singapore*
- **Orbital** *Summer 2020*  
Course Project Mentor (**Best Advisor Award**)  
*School of Computing, National University of Singapore*
- **Graphics Rendering Techniques (CS4247)** *Spring 2020*  
Teaching Assistant  
*School of Computing, National University of Singapore*
- **Computer Graphics (CS3241)** *Fall 2019*  
Teaching Assistant  
*School of Computing, National University of Singapore*