

# Nuntipat Narkthong

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## Summary

I am a Ph.D. candidate in the department of electrical and computer engineering at Northeastern University. Prior to that, I was a lecturer at King Mongkut's University of Technology Thonburi, Bangkok, Thailand, and a founder of Ingorage Assistive Technology Co., Ltd., an assistive technology startup in Thailand. I have a proven track record of continued innovation, as demonstrated by numerous international awards and media coverage from my past open-source and commercial projects, notably FloodFinder (2012), Visionear (2015), Maker Playground (2018), and JustSigns (2021). Recently, I have been actively conducting research in the field of edge machine learning and computer architecture and serve as a reviewer for top-tier architecture and programming language conferences.

## Education

Jan 2023 – Present	Doctor of Philosophy in Computer Engineering Northeastern University, Boston, MA
Jul 2015 – Mar 2020	Master of Engineering (Computer Engineering) King Mongkut's University of Technology Thonburi (KMUTT), Bangkok, Thailand
May 2011 – Jul 2015	Bachelor of Engineering (Computer Engineering) (First Class Honors) King Mongkut's University of Technology Thonburi (KMUTT), Bangkok, Thailand

## Work Experience

Dec 2020 – Dec 2022	Lecturer, Department of Computer Engineering, King Mongkut's University of Technology Thonburi (KMUTT), Bangkok, Thailand
Jan 2020 – Dec 2022	Part-time Computer Science Teacher (Grade 10-11), Assumption Convent School, Bangkok, Thailand
Jan 2018 – Dec 2022	Part-time Computer Science Teacher (Grade 10), Saint Francis Xavier Convent School, Bangkok, Thailand
Sep 2017 – Present	Founder and Director, Ingorage Assistive Technology Co., Ltd.
May 2014 – Aug 2014	Research Intern, Sensor Fusion Group, Department of Electrical Engineering and Computer Science, Syracuse University, New York, USA

## Awards and Recognition

### International Awards

#### *First Place*

Jul 2021	Grand Winner TECH PLANTER Demo Day 2021 (with 24 startups team) - <a href="#">link</a>	Bangkok, Thailand
Aug 2015	Grand Prize Winner and Plastics One Advanced Manufacturing Award	Virginia, USA

VT KnowledgeWorks Global Student Entrepreneurship Challenge 2015  
(with teams from 14 countries) - [link](#)

Nov 2012 First prize winner of the Students with Solutions 2012  
United States Agency for International Development (USAID) - [link](#) Bangkok, Thailand

*First Runner-up*

Nov 2024 First Runner-up  
International ICT Innovative Services Contest 2024 (InnoServe 2024)  
(with teams from 13 countries) - [link](#) Taipei, Taiwan

Oct 2019 Silver Awards (First Runner-up) in Research and Development Category  
ASEAN ICT Awards (AICTA) 2019 (with teams from 10 countries) - [link](#) Vientiane, Laos

Nov 2018 First Runner-up  
International ICT Innovative Services Contest 2018 (InnoServe 2018)  
(with teams from 12 countries) Taipei, Taiwan

Oct 2018 Merit Award (First Runner-up) in Inclusion & Community Category  
Asia Pacific ICT Alliance Awards 2018 (APICTA 2018)  
(with teams from 15 countries) - [link](#) Guangzhou, China

Oct 2018 Merit Award (First Runner-up) in Internet of Things Category  
Asia Pacific ICT Alliance Awards 2018 (APICTA 2018)  
(with teams from 15 countries) - [link](#) Guangzhou, China

Dec 2016 Merit Award (First Runner-up) in Inclusion & Community Category  
Asia Pacific ICT Alliance Awards 2016 (APICTA 2016) - [link](#) Taipei, Taiwan

Nov 2015 Merit Award in Tertiary Student Project Category  
Asia Pacific ICT Alliance Awards (APICTA 2015) - [link](#) Colombo, Sri Lanka

Aug 2015 First Runner-up of the 8th Student Innovation Challenge  
International Convention on Rehabilitation Engineering and Assistive Technology (15 finalist teams from 6 countries) Singapore

*Second Runner-up*

Nov 2015 Second Runner-up and Best Innovation Award  
International ICT Innovative Services Contest 2015 (InnoServe 2015)  
(8 finalist teams from 6 countries) Taipei, Taiwan

*Country (Thailand) Representative*

Aug 2021 Thailand Representative  
TECH PLANter ASIA FINAL 2021 - [link](#) Singapore  
(Online)

Mar 2020 Top 50 Finalist from 850 startup around the world  
10th Lee Kuan Yew Global Business Plan Competition (LKYGBPC) - [link](#) Singapore  
(Online)

Feb 2019 Asia Regional Finalists  
Microsoft Imagine Cup World Championship 2019 - [link](#) Sydney, Australia

Sep 2017 Top 36 Finalist from 550 startup around the world  
9th Lee Kuan Yew Global Business Plan Competition (LKYGBPC) Singapore

Nov 2016 Thailand Representative  
Copenhagen, Denmark

Creative Business Cup 2016 (selected to be the only representative of Thailand to compete with team from 60 countries) - [link](#)

Mar 2016 Selected as 10 finalists team in dtac accelerate batch 4 Bangkok, Thailand

### National Awards (in Thailand)

Sep 2019 First Prize Winner in Internet of Things Category Thailand ICT Awards 2019 - [link](#)

May 2019 Second Runner-up Young-D Startup Ideation Contest Siam Commercial Bank - [link](#)

Aug 2018 First Prize Winner in Inclusion and Community (Education) and Internet of Things Category Thailand ICT Awards 2018

Sep 2018 First Runner-up of Falling Walls Lab Thailand 2018

Aug 2016 First Prize Winner of Creative Business Cup Thailand Edition 2016 - [link](#)

Oct 2016 First Prize Winner in Inclusion and Community Category Thailand ICT Awards 2016 - [link](#)

Nov 2015 First Prize Winner of Samart Innovation Awards 2015 Samart Corporation PCL

Aug 2015 First Prize Winner in Tertiary Student Project Category Thailand ICT Awards 2015

Apr 2015 First Prize Winner in the World Citizenship Category Microsoft Imagine Cup Thailand 2015 - [link](#)

Nov 2014 First Runner-up of Geo-informatics Applications Contest : G-CON 2014 Geo-Informatics and Space Technology Development Agency (GISTDA)

Mar 2014 Second Runner-up of the National Software Contest 2014

Dec 2013 First Prize Winner of GISTDA - GIS Applications Contest (G-CON) 2013 Geo-Informatics and Space Technology Development Agency (GISTDA) - [link](#)

Mar 2013 First Runner-up of the National Software Contest 2013

### Advised Student Awards (Role: Mentor)

May 2021 First Prize Winner in the Lifestyle Category Microsoft Imagine Cup World 2021 (open to student worldwide, 12 teams in the world final round) - [link](#) Washington, USA (Online)

Jul 2021 First Prize Winner NTT Digital Innovation Challenge 2021 Bangkok, Thailand

Aug 2022 First Runner-up of the Global Student Innovation Challenge International Convention on Rehabilitation Engineering and Assistive Technology (23 finalist teams) Hongkong (Online)

Oct 2021 First Runner-up (from 400 student startup teams across Thailand) Startup Thailand League 2021 - [link](#) Bangkok, Thailand

Jul 2018 Merit Award from the 12th Student Innovation Challenge International Convention on Rehabilitation Engineering and Assistive Technology Shanghai, China

Oct 2017 Media Awards from Young Technopreneur 2017 Bangkok, Thailand

	National Science and Technology Development Agency - <a href="#">link</a>	
Sep 2019	Thailand Representative in VT KnowledgeWorks Global Student Entrepreneurship Challenge 2019	Virginia, USA

## Media Coverage

### Broadcast Media

- NEW 18, NEWtalk, “A World Without Sound and A World That Cannot See—They are the Problem Solvers” (Thai: โลกที่ไร้เสียง และ โลกที่มองไม่เห็น พากษาคือผู้ที่จะมาแก้ไขปัญหา), Oct 24, 2019 ([link](#))
- Thai News Agency MCOT, in on at, “Maker Playground, a Tool for Rookie Innovators” (Thai: Maker Playground เครื่องมือนวัตกรรมมือใหม่), Apr 24, 2018 ([link](#))
- Rama Channel, Pob Mor Rama (Idea Cheewit Dee), “Talking Glasses for the Visually Impaired.” (Thai: แฉ่ส่งเสียงเพื่อผู้พิการทางสายตา), Aug 2, 2017 ([link](#))
- Nation TV, Start-up Go Global (Thai: ท้าฝันคนปั้นแอป), Sep 2, 2016 ([link](#))
- 9MCOT, Science Power Thinking for Thai People, “Visionear, a New Assistant for the Visually Impaired” (Thai: visionear ผู้ช่วยใหม่สำหรับผู้บกพร่องทางการมองเห็น), Dec 2, 2015 ([link](#))
- National Broadcasting Services of Thailand (NBT), NBT Young Creators Season 2 Ep. 19, Jul 6, 2015 ([link](#))
- Voice TV, Cool Tech, “Visionear: Gadget for the Visually Impaired” (Thai: Visonear แก๊กเจ็ตสำหรับผู้มีความบกพร่องทางการมองเห็น), Jun 4, 2015 ([link](#))
- MCOT, MCOT DOT NET, “Headphones that Help the Blind See” (Thai: หูฟังที่ช่วยมองແທນคนตาบอด), May 5, 2015 ([link](#))
- Channel 3 Family, Kud Khao Dee, “Top Apps from Imagine Cup and the DPST Science Camp” (Thai: สุดยอดแอพฯ Imagine Cup, ค่ายวิทยาศาสตร์ พลพา.), Apr 29, 2015 ([link](#))
- Channel 3 Thailand, Baan Phraram 4 (IT Today), “Interview with Team Visionear - Microsoft Imagine Cup Thailand 2015” (Thai: สมภาษณ์ทีม Visionear - Microsoft Imagine Cup Thailand 2015), Apr 2, 2015 ([link](#))

### Newspapers

- Roanoke Times, “Project to help the blind takes grand prize”, Aug 22, 2015 ([link](#))
- The Nation, “Imagine Cup empowers youth for digital economy”, May 7, 2015 ([link](#))
- Bangkok Post, “Imagine that”, May 6, 2015 ([link](#))
- Daily News, “3 winning teams of Imagine Cup Thailand 2015”, May 5, 2015 ([link](#))
- Matichon Daily, “Microsoft reveals 3 winning teams of Imagine Cup Thailand 2015”, May 4, 2015 ([link](#))
- Krungthep Turakij, “Imagine Cup – shortcut that helps create IT personnel”, May 2, 2015 ([link](#))

### Digital Media

- The Nation, “Thai team makes it Microsoft’s Imagine Cup finals”, Apt 5, 2021 ([link](#))
- Bangkok Post, “IoT for everybody”, Mar 6, 2019 ([link](#))
- Post Today, “Visionear: Smart Glasses for the Visually Impaired” (Thai: Visionear สร้างแวร์ต้าอัจฉริยะ), Sep 20, 2018 ([link](#))
- The MATTER, “Convert Everything to Sound with Visionear: The Personal Assistant for the Visually Impaired” (Thai: แปลงทุกสิ่งเป็นเสียงด้วย Visionear ผู้ช่วยส่วนตัวของผู้พิการทางสายตา), Nov 3, 2016 ([link](#))

- The Nation, "KMUTT acts as incubator for students' innovations", Sep 30, 2016 ([link](#))
- The Nation, "New Thai-developed technology helping visually impaired", Sep 23, 2016 ([link](#))
- Thansettakij, "dtac Accelerate Showcases 14 Hottest Thai Startups to VCs" (Thai: ดีแทค แอคเชเลอเรทช์ ผลงาน 14 startups ไทยที่ร้อนแรงที่สุด ต่อหน้า VC), Aug 19, 2016 ([link](#))
- The Nation, "Rare hardware start-up aims to provide smart glasses for the blind", July 19, 2016 ([link](#))
- The Nation, "Trio Thai innovations", May 24, 2016 ([link](#))
- Post Today, "Social Startup: Fulfilling Dreams with Smart Glasses for the Blind" (Thai: สถาปัตย์ เพื่อ สังคม سانฟันแวนเพื่อคนตาบอด), May 20, 2016 ([link](#))
- GSM Association, "FloodFinder app: Real-time flood data using mobile phones in Thailand", Jan 29, 2016 ([link](#))
- iT24Hrs, "Winners Revealed: Young Technopreneur 2015 Project Building a New Generation of Tech Startups" (Thai: เมย์ஜิมผู้ชนะ โครงการถ้าแก่น้อยเทคโนโลยี 2015 สร้าง Tech Startup รุ่นใหม่), Nov 5, 2015 ([link](#))
- Bangkok Post, "Sounds of adventure", Sep 30, 2015 ([link](#))
- Bangkok Post, "Imagine that", May 6, 2015 ([link](#))
- Daily News, "3 Champion Teams of 'Imagine Cup Thailand 2015'" (Thai: 3 ทีมแชมป์ 'อิมเมจิ้น คัพ ไทยแลนด์ 2015'), May 5, 2015 ([link](#))
- Bangkok Post, "A flood of ideas", Nov 21, 2012 ([link](#))
- The Nation, "Student apps can save lives, protect forests", Nov 12, 2012 ([link](#))

## Exhibition

- Technology Investment Conference 2019 "Smart Ageing", Hyatt Regency Sukhumvit 13, Bangkok, Thailand, Jul 18, 2019
- Thailand Industry Expo 2017, IMPACT Muang Thong Thani, Bangkok, Thailand, Jul 25 - 30, 2017
- Techsauce Summit 2016, Centara Grand & Bangkok Convention Centre, Bangkok, Thailand, Jul 23-24, 2016
- InnovFest unBound 2016, Marina Bay Sands Expo & Convention Centre, Singapore, May 17-18, 2016

## Service to Profession

### Judges and Panelists

Apr 2022 Selection Committee for KMUTT Representative Teams, Startup Thailand League 2022  
Organizer: Hatch Business Incubator, King Mongkut's University of Technology Thonburi

Apr 2021 Selection Committee for KMUTT Representative Teams, Startup Thailand League 2021  
Organizer: Hatch Business Incubator, King Mongkut's University of Technology Thonburi

Sep 2020 – Nov 2020 Judge for R Cheewa Inno Camp 2020, a nationwide innovation camp for vocational students held across five regions of Thailand

1. Northeast 1: Udon Thani Rajabhat University ([link](#))
2. Northeast 2: Rajamangala University of Technology Isan ([link](#))
3. Central: Sirindhorn Science Home, Thailand Science Park ([link](#))
4. North: Chiang Mai Phucome Hotel ([link](#))
5. South: Suratthani Technical College ([link](#))

Organizer: Thailand's National Electronics and Computer Technology Center (NECTEC) and Siam Commercial Bank Public Company Limited

Oct 2016 Panelist in Asian Youth Innovation Forum on 'Leaving No One Behind'

Organizer: United Nations Thailand

Jul 2016      Panelist in the IOT Stage (Topic: Thai hardware startups: Challenges and opportunities)  
Organizer: Techsauce Summit 2016

Nov 2015      Ambassador's Entrepreneurship Roundtable with U.S. Ambassador Glyn T. Davies ([link](#))  
Organizer: U.S. Embassy Bangkok

### **Paper Reviews (Artifact evaluation committee)**

- 6 papers reviewed in ACM SIGPLAN Conference on Object-Oriented Programming, Systems, Languages, and Applications (OOPSLA 2025), Singapore ([link](#))
- 3 papers reviewed in 46<sup>th</sup> ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2025), Seoul, South Korea ([link](#))
- 1 paper reviewed in 39<sup>th</sup> European Conference on Object-Oriented Programming (ECOOP 2025), Bergen, Norway ([link](#))
- 2 papers reviewed in 30<sup>th</sup> ACM International Conference on Architectural Support for Programming Languages and Operating Systems (ASPLOS 2025), Rotterdam, The Netherlands ([link](#))
- 2 papers reviewed in 38<sup>th</sup> European Conference on Object-Oriented Programming (ECOOP 2024), Vienna, Austria ([link](#))
- 1 paper reviewed in 45<sup>th</sup> ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI 2024), Copenhagen, Denmark ([link](#))

## **Publications**

### **Papers**

- N. Narkthong, Y. Luo, and X. Xu, "ShuffleV: A Microarchitectural Defense Strategy against Electromagnetic Side-Channel Attacks in Microprocessors", in Proceedings of the 28th International Symposium on Research in Attacks, Intrusions and Defenses (**RAID '25**) - [Paper](#)
- S. Duan, N. Narkthong, Y. Luo, S. Ren and X. Xu, "Holistic Design towards Resource-Stringent Binary Vector Symbolic Architecture", 2025 62nd ACM/IEEE Design Automation Conference (**DAC**), San Francisco, CA, USA, 2025, pp. 1-7 - [Paper](#)
- N. Narkthong, S. Duan, S. Ren, and X. Xu, "MicroVSA: An Ultra-Lightweight Vector Symbolic Architecture-based Classifier Library for Always-On Inference on Tiny Microcontrollers", in Proceedings of the 29th ACM International Conference on Architectural Support for Programming Languages and Operating Systems (**ASPLOS**), Volume 2, La Jolla, CA, USA, 2024, pp. 730–745. - [Paper](#), [Code](#)
- N. Narkthong, C. Jariyavajee, and X. Xu, "ALLI/O Diagram: An Action-based Visual Programming Language for Embedded System", in 2024 IEEE Symposium on Visual Languages and Human-Centric Computing (**VL/HCC**), 2024, pp. 211–216. - [Paper](#)

### **Paper (In press)**

- N. Narkthong, and X. Xu, "PermuteV: A Performant Side-channel-Resistant RISC-V Core Securing Edge AI Inference", in 2026 IEEE International Symposium on Hardware Oriented Security and Trust (**HOST**)

### **Book**

- N. Narkthong and K. Sriratanaban, "Building Microcontroller Project with Maker Playground and Arduino Hardware", Innovative Experiment Co., Ltd., 2020 (published in Thai) - [Website](#)

## Grants and Fellowships

2020 - 2021 Name: Technology and Innovation-Based Enterprise Development Fund (TED Fund)  
Title: Maker Playground: automatic code generation for embedded and IoT device development from behavioral-based diagram  
Amount: THB 1,900,000 (≈\$60,000)  
Organizer: Ministry of Science and Technology of Thailand

2018 - 2019 Name: Innovation Hub - Ageing Society  
Title: Visionear: smart glasses for assisting the visually impaired people  
Amount: THB 865,650 (≈\$28,000)  
Organizer: Council of University Presidents Thailand

2017 - 2018 Name: Research Gap Fund  
Title: Visionear: smart glasses for assisting the visually impaired people  
Amount: THB 779,250 (≈\$25,000)  
Organizer: Thailand National Science and Technology Development Agency (NSTDA)

2015 - 2017 Name: NSTDA-University-Industry Research Collaboration (NUI-RC)  
Title: Full fellowship for master's degree study (including tuition and stipend)  
Amount: THB 327,000 (≈\$10,500)  
Organizer: Thailand National Science and Technology Development Agency (NSTDA)