

Nuntipat Narkthong

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EDUCATION

- **Northeastern University** Boston, MA
Doctor of Philosophy in Computer Engineering Jan 2023 - Present
- **King Mongkut's University of Technology Thonburi** Bangkok, Thailand
Master of Engineering (Computer Engineering) Jul 2015 - Mar 2020
Thesis: The Design and Implementation of an Image Processing Framework with a Graphical Programming Interface for Low-Ended FPGAs
- **King Mongkut's University of Technology Thonburi** Bangkok, Thailand
Bachelor of Engineering (Computer Engineering) (First Class Honours) May 2011 - Jun 2015

ACADEMIC POSITION

- **King Mongkut's University of Technology Thonburi** Bangkok, Thailand
Researcher/Lecturer, Department of Computer Engineering 2020 - 2022
- **Assumption Convent School** Bangkok, Thailand
Part-time Computer Science Teacher (Grade 10-11) 2020 - 2022
- **Saint Francis Xavier Convent School** Bangkok, Thailand
Part-time Computer Science Teacher (Grade 10) 2018 - 2020

INDUSTRIAL EXPERIENCE

- **Ingarage Assistive Technology Co., Ltd.** Bangkok, Thailand
CEO and Co-Founder 2017 - Present

INTERNSHIP

- **Department of Electrical Engineering and Computer Science, Syracuse University** New York, USA
Research Intern at the Sensor Fusion Group under the supervision of Prof. Pramod K. Varshney May 2014 - Aug 2014

HONORS AND AWARDS

International Awards

- **Grand Prize Winner and Plastics One Advanced Manufacturing Award** Virginia, USA
VT KnowledgeWorks Global Student Entrepreneurship Challenge 2015 (with teams from 14 countries) Aug 2015
- **First Runner-up of the 8th Student Innovation Challenge** Singapore
International Convention on Rehabilitation Engineering and Assistive Technology (15 finalist teams from 6 countries) Aug 2015
- **Silver Awards (First Runner-up) in Research and Development Category** Vientiane, Laos
ASEAN ICT Awards 2019 (AICTA 2019) (with teams from 10 countries) Oct 2019
- **Second Runner-up and Best Innovation Award** Taipei, Taiwan
International ICT Innovative Services Contest 2015 (InnoServe 2015) (8 finalist teams from 6 countries) Nov 2015
- **Merit Award in Inclusion & Community (Education) and Internet of Things Category** Guangzhou, China
Asia Pacific ICT Alliance Awards 2018 (APICTA 2018) (with teams from 15 countries) Oct 2018
- **Thailand Representative in Creative Business Cup 2016** Copenhagen, Denmark
Selected to be the only representative of Thailand to compete with team from 60 countries Nov 2016
- **Excellent Oral Presentation** Xiamen, China
2019 IEEE 4th International Conference on Image, Vision and Computing (ICIVC) Jul 2019

Advised Student Awards

- **First Prize Winner in the Life Style Category** Online / Washington, USA
Microsoft Imagine Cup World 2022 (open to student worldwide, 12 teams in the world final round) May 2021
- **First Runner-up of the Global Student Innovation Challenge** Online / Hong Kong
International Convention on Rehabilitation Engineering and Assistive Technology (23 finalist teams) Aug 2022

Local Competition (Thailand)

- First prize winner of Students with Solutions 2012 mobile application contest held by the United States Agency for International Development (USAID)

- First prize winner of Thailand ICT Awards 2019 in the Internet of Things category
- First prize winner of Thailand ICT Awards 2018 in the Education and the Internet of Things category
- First prize winner of Thailand ICT Awards 2016 in the Inclusion & Community category
- First prize winner of Thailand ICT Awards 2015 in the Tertiary Student Project category
- First prize winner of Microsoft Imagine Cup Thailand 2015 in the World Citizenship category
- First prize winner of Samart Innovation Awards 2015
- First runner-up of Falling Walls Lab Thailand 2018
- First runner-up of Thailand National Software Contest 2013
- Second runner-up of Thailand National Software Contest 2014

GRANTS AND FELLOWSHIPS

- **Technology and Innovation-Based Enterprise Development Fund (TED Fund)** THB 1,900,000 (≈\$60,000)
Ministry of Science and Technology of Thailand 2020-2021
Title: Maker Playground: automatic code generation for embedded and IoT device development from behavioral-based diagram
- **Innovation Hub - Ageing Society** THB 865,650 (≈\$28,000)
Council of University Presidents Thailand 2018-2019
Title: Visionear: smart glasses for assisting the visually impaired people
- **Research Gap Fund** THB 779,250 (≈\$25,000)
Thailand National Science and Technology Development Agency (NSTDA) 2017-2018
Title: Visionear: smart glasses for assisting the visually impaired people
- **NSTDA-University-Industry Research Collaboration (NUI-RC)** THB 327,000 (≈\$10,500)
Thailand National Science and Technology Development Agency (NSTDA) 2015-2017
Full fellowship for master's degree study (including tuition and stipend)

TEACHING EXPERIENCES

Undergraduate Courses

- Digital Electronics and Logic Design: (Fall 2021/2022)
- Embedded System: (Spring 2021/2022)
- Computer Architecture: (co-instructor with Dr.Jarturon Harnsomburana) (Spring 2022)

Teaching Assistance

- Introduction to Computer Programming: (Fall 2015 with Dr.Sally E. Goldin)
- Algorithms and Data Structures: (Spring 2015 with Dr.Sally E. Goldin and Fall 2017 with Dr.Peerapon Siripongwutikorn)
- Circuits and Electronics for Computer Engineering: (Fall 2016 with Asst.Prof.Sanan Srakaew)
- Digital Systems Design: (Spring 2016 with Asst.Prof.Sanan Srakaew)
- Computer Architectures and Systems: (Fall 2015 with Dr.Tiranee Achalakul and Spring 2017 with Dr.Stephen John Turner)

OPEN-SOURCE AND COMMERCIAL PROJECTS

- **Maker Playground: embedded & IoT IDE with behavioral-based diagram and automatic code generator**
Role: Project Leader <https://github.com/MakerPlayground/MakerPlayground>
Media Coverage: BangkokPost, Thai News Agency MCOT, Workshop for G6-12 Student (YouTube)
- **Visionear: image-recognition-enabled smart glasses for the visually impaired people**
Role: Project Leader
Media Coverage: The Nation Thailand, Virginia Tech Corporate Research Center, Live Presentation (YouTube)
- **Log Meter: automatic timber classification using smartphone and IP camera**
Role: Project Leader [App Store](#), [Google Play](#)
Funded and deployed in 8 of SCG Packaging's factories, a leading multinational consumer packaging solutions provider
- **FloodFinder: crowd-sourced real-time flood monitoring application using smartphone camera**
Role: Project Leader
Media Coverage: U.S. Agency for International Development, GSM Association
- **JustSigns: web application for generating real-time 3D Thai sign language captions from video subtitles**
Role: Advisor
Media Coverage: The Nation Thailand, TECH PLANTER
- **jSerialComm: platform-independent serial port access library for Java**
Role: Contributor (contributing support for Apple Silicon architecture) <https://github.com/Fazecast/jSerialComm>

PUBLICATIONS

Book

- **N. Narkthong** and K. Sriratanaban, “Building Microcontroller Project with Maker Playground and Arduino Hardware”, Innovative Experiment Co., Ltd., 2020 (published in Thai)

Publication

- **N. Narkthong** and S. Prom-on, “The Design and Implementation of an Image Processing Framework with a Graphical Programming Interface for Low-Ended FPGAs”, 2019 IEEE 4th International Conference on Image, Vision and Computing (ICIVC), 2019, pp. 326-330
- **Nuntipat Narkthong**, Shijin Duan, Shaolei Ren, and Xiaolin Xu. 2024. 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, Volume 2 (ASPLOS '24), Vol. 2. Association for Computing Machinery, New York, NY, USA, 730–745. <https://doi.org/10.1145/3620665.3640374>

RESEARCH INTERESTS

- FPGAs and reconfigurable computing
- Computer architecture
- Image processing and computer vision