Khemarat Boonyapaluk

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Education

Brown University   Providence, RI. | Expected Graduation: May 2022
Bachelor of Science, Computer Science, GPA 3.86
Course: Digital Electronics Systems, Artificial Intelligence, Intro to Computer System, Intro to Robotics, Probability Theory

Coding and Research Experience

Alert Innovation   May 2019 – August 2019
Embedded Software Engineer Intern   Massachusetts, US
- Developed and implemented a new localization algorithm for the company's warehouse robots in C++17; the new algorithm helps the robot operate in extreme conditions, such as subzero temperature, and do an automatic recovery from error/emergency stop
- Modified CMake build script of the robot software to speed up the recompilation time
- Investigate various trouble tickets and implements bugfixes

Intelligent System Laboratory 2   June 2018 – August 2018
Research Intern, Chulalongkorn University   Bangkok, Thailand
- Designed and Programmed an indoor delivery robot using C++
- Researched Localization and Reactive Navigation algorithms to use in the ground robot with LIDAR
- Mentored a first-year master student in robotic
- Coordinated with an engineering team to fix hardware errors

19th Young Scientist Competition   Oct 2016 - March 2017
Team leader, National Finalist   Bangkok, Thailand
- Developed a program with C++ that can quickly process and categorize sounds into pre-trained groups using Fast Fourier Transform, modified windows function, and K-NN classifier
- Implemented an automatic test system and web interface in Node.js
- Planned the project and managed a 3-person team

Leadership Experience

NHM High Altitude Balloon   Oct 2017 – May 2018
Team Leader, Northfield Mount Hermon School   Massachusetts, US
- Led a team of 10 students in developing a high-altitude balloon to collect scientific data and take a video
- Designed a PCB and wrote a C program for the payload, which includes communication, logging, and tracking system

Teaching and Education Experience

STEM Outreach Camp   August 2018
Facilitator, Institute for the Promotion of Teaching Science and Technology   Nakhon Pathom, Thailand
- Planned and facilitated a three days STEM outreach camp with 200 sixth-grade students
- Ran 3 workshops/activities related to computer science and engineering
- Gave a 10-minute interactive lecture on introduction to computer science

Computer Science TA   Oct 2017 – May 2018
Teaching assistant, Northfield Mount Hermon School   Massachusetts, US
- Led office hours 4 hours per week for all computer science classes in the school; debugging in Java,JavaScript,HTML,CSS

Honors and Awards

- **1st place** in an online coding competition: Codeforces Round #366 Div. 2 **(6,189 Participant)**, 2016
- **5st place** in Thailand's International Olympiad in Informatics representative selection process **(from 2,000+ Students)**, 2017
- **1st place** in TechSpark Mobile Application Development Contest, Assumption University, TH, 2016
- **1st place** in C++ Programming, Thailand National Arts & Crafts Fair, 2017
- **Platinum Division**, USA Computing Olympiad

Skills and Interests

Programming:
Proficient: C, C++17, JavaScript, Java, HTML5, Nodejs, React.js, LaTeX, Git
Knowledgeable: RTOS (QNX), Python, MongoDB, SQL, Matlab, Mathematica, CMake, ROS

Interests: Board games (Power Grid, Ticket to Ride, etc.), Cooking Thai Food, Robotics, DIY, Woodworking

Engineering:
Proficient: SketchUp, Eagle (Circuit and PCB Design), Agile (Scrum, JIRA)
Knowledgeable: Solidworks (CAD), Prototyping (3D printing, machining, electronic, etc.)

Language: Thai (native)