





# KHEMARAT BOONYAPALUK

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## Education

**Brown University**  
Providence, RI.  
Graduation: May 2022  
Computer Science, B.Sc.  
Engineering, B.A.  
GPA 3.92

## Coursework

Operating Systems  
Computing Systems Design  
Digital Electronics Systems  
Distributed Systems  
Artificial Intelligence  
Computer System  
Robotics  
Electrical Circuits & Signals  
Functional Programming  
Data Structure and Algorithm

## Skills

### Programming

**100,000 Lines+**

C, C++11

**10,000 Lines+**

JavaScript (NodeJS, React,  
Browser, Meteor)

**1,000 Lines+**

Java, Python, HTML5, CSS,  
Verilog, OCaml, Scala

### Familiar

Assembly, MATLAB, SQL,  
Mathematica, CMake

## Technical

**Tools:** LaTeX, Git

**Robot System:** ROS, RTOS  
(QNX)

**Schematic and PCB Design:**  
Eagle, PADS

**Agile:** Scrum, JIRA, Confluence

**CAD:** Solidworks, Fusion360

**Language:** Thai (native)

## Programming 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** 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 robotics
- Coordinated with an engineering team to fix hardware errors

## Web Development Experience

**Custom Book** Oct 2018 – Jan 2019  
**Full Stack Web Developer** Rhode Island, US

- Design and develop a website with ReactJS, Firebase, and a CSS Framework from the ground up.
- The website streamlines photobook making process. It provides an easy-to-use UI for a customer to order a book, and then aggregates all the submission data for the business owner to print the books.

## Engineering Experience

**Brown Design Workshop** September 2019 - Present  
**Monitor** Rhode Island, US

- Maintains a 10k square feet of open workshop area with 1,000+ members
- Helps 100+ students to use machines safely and effectively, ranging from 3D printers, power saws, to digital design tools like CAD and illustrator

## Honors and Awards

- **3<sup>rd</sup> place** in Northeast North America International Collegiate Programming Contest (Brown University Team)
- **1<sup>st</sup> place** in an online coding competition: Codeforces Round #366 Div. 2 **(6,189 Participant)**, 2016
- **5<sup>th</sup> place** in Thailand's International Olympiad in Informatics representative selection process **(from 2,000+ Students)**, 2017
- **1<sup>st</sup> place** in C++ Programming, Thailand National Arts & Crafts Fair, 2017