

Jacky Boen

Linux and open source enthusiast

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EXPERIENCE

International Intelligent Machines, Singapore — Senior Software Engineer

July 2016 - PRESENT

Programmed web apps for Solaris robot face and controls, and also native executable programs for the card reader, card dispenser, 360 cameras attached on the robot. Programmed the initial server and database for synchronizing face features used for recognition. Managed the web server for source code and wiki.

Bartle Bogle Hegarty, Singapore — Creative Technologist

August 2013 - July 2016

Programmed various things such as apps, gadgets, electronics, servers, websites for clients such as Nike, Coca Cola, NTUC, IKEA, Harper's Bazaar. Also helped to come up with many of the ideas for the interactive deliverables.

EDUCATION

Lasalle College of the Arts, Singapore — Bachelor of Arts

August 2010 - August 2013

Studied Interactive Art course which combines art with programming to create the dynamicity and interactivity for the artworks. Learned conceptual thinking, programming, and electronics using Processing and Arduino.

PROJECTS

Solaris — Face (Web App)

Programmed the face app of the Solaris robot to display an animated facial expressions and answer questions asked through speech recognition. It also provides technical support through video call feature from the app using WebRTC.

Solaris — Control (Web App)

Programmed the controller app the lets the user see the robot's 360

SKILLS

Linux programming in C/C++

Backend server programming in Go

Web app development in JavaScript using Vue and React

PostgreSQL and Redis databases

Git source control management

Linux administration using Upstart, systemd, udev, dbus, and cron

LANGUAGES

English, Indonesian, Chinese

vision, toggles certain functionalities on/off, see the robot's status such as battery level. The most important part is the mapping aspect where the user can start mapping the environment and store it to be used as patrolling map later. The user can set waypoints for the patrol.

Solaris — *Card Reader (C/C++)*

A native C program that communicates with the card reader machine attached on the robot for reading Chinese ID cards. It's automatically started through Upstart and udev.

Solaris — *Card Dispenser (C/C++)*

A native C program that communicates with the card dispenser machine attached on the robot for dispensing generic cards. Implemented the ACT serial protocol. It's automatically started through Upstart and udev.

Solaris — *Webcam Streamer (C/C++)*

A native C web server that opens the 360 webcams and save the images over HTTP. It's automatically started through Upstart and udev.

Ego — *libdoorsystemdb (Go, Library)*

A library written in Go to be used by the other C++ programs such as the face recognition program to access the PostgreSQL database. It is also used for speaking names and opening doors when the robot recognizes a person.

V-Book — *V-Book App (Web)*

An app for visitor in China to register themselves to a specific company so the company's **Ego** will be able to recognize the person and opens the door for him / her. It requires Chinese ID card to register.

IKEA Bedtime Stories — *App and lamps (C/C++, Arduino, Java, Android App)*

An Android app for IKEA to sell interactive and immersive storybook where the reader would read the story and it would activate sound effects based on the part the reader reads. It can also triggers the lamps that come with it to animate in a way that is more immersive such as for lighting strike.

139 Cansole — *App and gadget (C/C++, Arduino, Java, Android App)*

A customized electronic gaming Coke gadget can that user can get in vending machine if he / she is lucky. The games are implemented within 139 kilobytes in Arduino to reference its calories and streamed to the mobile phone that user can put on the can through Bluetooth.

<https://github.com/aqiank/139Cansole> (only the promo website source

code)

<https://htmlpreview.github.io/?https://github.com/aqiank/139Cansole/master/index.html> (preview of the website)

Circle of Light — Long-exposure photo booth (C/C++, Arduino, Web App, Go)

A self-service photo booth that consists of a rotating LED stick. User can choose a picture from the tablet and stand in front of the camera to capture a photo of him / her with long-exposure drawing by the rotating LED stick.

<https://github.com/aqiank/CircleOfLight>

Eye Art — Estee Lauder booth (Web app)

An app for tablet in Estee Lauder that allows visitor to generate an art card by scanning their eyes through Dino-lite camera. The user can apply certain quotes as an overlay and share it through social media.

<https://www.youtube.com/watch?v=CdUQnnlTox8>

Sense Net — Sensor gadget (C/C++, Arduino, Web app)

A sensor gadget that collects various sensor data such as CO, temperature, humidity, dusts throughout wherever the sensor are and sends it to a server. The app will be able to display visualizations of the data.

BajakJKT — Art installation (Electronics, soldering)

Helped set up an art installation in Jakarta, Indonesia with 2000 interactive lanterns using 50 Arduino Megas as the controllers. Collaborated with Arduino.

<https://www.youtube.com/watch?v=SCeSCibAA98>

Abstraction — Theatre performance (Java, Processing)

A dynamic projection mapping on a performance with sensors to trigger certain parts. Visuals are created through code. This was the final year project done together with classmates.

<https://www.youtube.com/watch?v=oiluGgiGLfo>

COCK — Theatre performance (Java, Processing)

A dynamic projection mapping on a performance. Visuals are created

through code.

<https://www.youtube.com/watch?v=30IjE61jNpA>

The River — Art installation (C/C++, Arduino, Electronics, Sculpture)

This is a dynamic lighting sculpture that displays animated lighting through a series acrylic pieces that evokes sense of a wave. It was displayed in iLight Marina Bay Sands 2012 as part of my class' diploma project.

<https://youtu.be/DyyASMzRgDo>

Go-SDL2 — SDL2 binding (Go)

A Go binding to the native SDL2 multimedia library. It's been featured on Golang Weekly twice and in a Justforfunc video by Francesc Campoy.

<https://github.com/veandco/go-sdl2>

<https://www.youtube.com/watch?v=aYkxFbd6luY>