

Jeongjoo Hong

SOFTWARE ENGINEER

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Experience

dmp Inc.

Sendai, Japan

SOFTWARE ENGINEER

Apr. 2014 - Present

- Developed switching applications which is using wireless signal such as Bluetooth, Wi-Fi, and acoustic tag.
- Developed augmented reality applications which display on optical head-mounted devices such as Google Glass, Sony SmartEye-Glass, and Microsoft HoloLens.
- Implemented a motion planning for Softbank pepper's behavior.
- Implemented applications for Omron HVC, Motorola Moto 360, and so on.
- Implemented image processing algorithms such as feature detection, image blending, photomosaic, and so on.
- Implemented signal processing algorithms such as accelerometer frequency analyzer, dual-tone multi-frequency generator, and so on.
- Implemented time synchronization via wireless communication
- Implemented a gesture recognizer which is accelerometer based real-time detector in android application, and conducted a blackbox testing on sensors of mobile device.
- Implemented a poker game logic, and analyzed probability.
- Maintained a music streaming application which is able to display on car navigation.

Republic of Korea Army

S.Korea

VOLUNTEER FOR MILITARY SERVICE

Nov. 2001 - Dec. 2003

- Served and discharged as combat information, sergeant

Education

Tohoku University, Graduate School of Information Sciences

Sendai, Japan

M.S. IN SYSTEM INFORMATION SCIENCES

Apr. 2012 - Mar. 2014

- Thesis : A Study of Multi-focus Scroll and Zoom Interactions using Elastic Metaphor

Tohoku University, Research Institute of Electrical Communication

Sendai, Japan

PARTICIPATED IN UNDERGRADUATE RESEARCH OPPORTUNITIES PROGRAM

Oct. 2011 - Mar. 2012

- Interactive Content Design Laboratory (Prof. Kitamura)

Gwangju University of Graduate School

Gwangju, S.Korea

M.S. IN INFORMATION AND COMMUNICATIONS ENGINEERING

Feb. 2010 - Mar. 2011

Gwangju University, Computer Electronic and Communications Engineering

Gwangju, S.Korea

PARTICIPATED IN UNDERGRADUATE STUDENT PROGRAM

May. 2005 - Feb. 2009

- Mobile and Communication Laboratory (Prof. Oh)

University of Toronto School, Continuing Studies

Toronto, Canada

COURSES COMPLETION

Mar. 2004 - Jan. 2005

- Comprehensive English

Gwangju University, Computer Electronic and Communications Engineering

Gwangju, S.Korea

B.S. IN INFORMATION AND COMMUNICATIONS ENGINEERING

Mar. 2000 - Feb. 2009

- Thesis : Adaptive Channel Equalization Simulation

Extracurricular Activity

Teaching Assistant

Oct. 2012 - Mar. 2013	Advanced Creative Engineering Training
Oct. 2012 - Feb. 2013	Creative Engineering Training
Sep. 2007 - Feb. 2008	C language

Tohoku University
Tohoku University
Gwangju University

Department Office Assistant

Mar. 2006 - Aug. 2006 Department of Computer Electronic and Communications Engineering
Mar. 2010 - Feb. 2011 Department of Computer Electronic and Communications Engineering

Gwangju University
Gwangju University

Awards & Scholarships

2009 Award, Excellent Bachelor of Engineering
2008 1st Scholarship, Excellent Student
2007 1st Award, Excellent Student
2007 1st Scholarship, Excellent Student
2006 2st Scholarship, Excellent Student
2006 1st Scholarship, Excellent Student
2005 2st Scholarship, Excellent Student
2005 1st Scholarship, Excellent Student

Gwangju University
Gwangju University
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DMP Inc.

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Interim Report 2016

The following has been prepared to updated information with the current project.

Through experiences of programming with bluetooth and network communication, there have been many

chances to use a lot of new techniques. I have, so far taking part in the 1 business project and created 8 demo projects. In the projects, I coded using the languages Java on Android, Processing, and so on.

Business Projects:

AR HOPE TOUR (Tohoku Univ. IRIDeS)

SmartEyeglass Applications (AR HOPE TOUR in Sendai)

Android, Java

Start and end command control using system broadcast with bluetooth signal

Panorama viewer using magnetic sensor data applications

Tsunami height display using (one euro filtered) accelerometer data application

Simple slideshow applications

SmartEyeglass Applications (AR HOPE TOUR in Tagajo)

Android, Java

Start and end command control using system broadcast with bluetooth signal

Panorama viewer using magnetic sensor data applications

Simple slideshow applications

Demo Projects:

HoloLens Test

Universal Windows Platform (UWP) Test

Windows, C++

Test for input controlling using gestures

Deploying and debugging 2D app

InfoSound Demo (Yamaha)

Acoustic Data Detector Test

Android, Java

Test for detecting the acoustic tag using infosound libraries of Yamaha

Showroom Project

SmartEyeGlass Application

Android, Java

Develop the resource reader for panorama images on external storage

Test for updating bitmap objects of SmartEyeglassAPI

SmartEyeglass Demo (Fukuoka)

AR Photo Demo

Android, Java

Develop the Cylinder-coordinate AR systems for Yamakasa, Nakagawa, and Nakasu Yatai contents

Photo Demo

Android, Java

Develop the photo displayers for Dontaku, and Kami Kawabata contents

Sensor Demo

Android, Java

Develop the data displayer for rotation vector

Pepper for Biz Test

Remote Control Test

Choregraphe, Python

Test for controlling the pepper's behaviors and monitoring sensors

SmartEyeglass Demo (SONY)

Audio Slide Demo

Android, Java

Develop the audio player with a slide

Gear AR Controller Test

TCP Sender Test

Processing, Java

Develop the TCP message sender using multi-threads

Test for the client's IP monitoring system

Timming-sync Protocol for Sensor Networks(TPSN) Test

Processing, Java

Develop the 2-way handshake synchronization via TCP Sender

Test for the master and slave communication

SmartEyeglass Test

iBeacon and Eddystone Signal Detection Test

Android, Java

Test for the iBeacon and Eddystone signal detecting and intents controlling

Test for the the scanning state with reliable timer

SmartEyeglass Test

Android, Java

Test for playing sound with slideshows and timer

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Annual Report 2015

The following has been prepared to updated information with the current project.

Through experiences of programming with various data and sensors, there have been many chances to use a lot of new techniques. I have, so far taking part in the

2 business projects and created 6 demo projects. In the projects, I coded using the languages C++ and Java on iOS and Windows.

In addition, I adopted and tested new algorithms for filter systems and machine learning techniques.

Business Projects:

FANT4STIC (20th Century Fox)

OpenCV based Dynamic-Link Library(DLL) for Unity

Windows, C++

Face Detection : Haar-like feature detection

Image Blending : Quasi-Poisson image blending

SIG-NATORI (Natori City)

SmartEyeglass Applications

Android, Java

Start and end command control using system broadcast with iBeacon

Simple slideshow applications

Panorama viewer using accelerometer data applications

Tsunami height display using accelerometer data application

Cylinder-coordinate augmented reality using rotation vector applications

Demo Projects:

Beams Name Card Demo

Black-and-White Sketch Effect Demo

Processing, Java / OS X, C++

Test for laplacian edge detection filter

Test for canny edge detection filter

Gear AR Demo

Dial Tone Demo

Processing, Java

Develop the Dual-Tone Multi-Frequency generator

UDP Sender Demo

Processing, Java

Develop the UDP message sender

UDP Receiver Test

Android, Java

Test for receiving messages from sender via UDP

Photomosaic Demo

Tile Image Mapping Demo

OS X, C++

Test for reduction pixel information as mosaic image

Test for finding an euclidean distance each pixel information

Develop insert-sorting algorithm for on-line

Develop customized insert-sorting algorithm

Develop quad-tree quantization algorithm

Face Detection Demo

Object Recognition Demo

Processing, Java / OS X, C++ / Windows, C++

Develop the pattern recognition with Haar-like, and lbp algorithms

Optical Flow Demo

Processing, Java / OS X, C++

Develop the Lucas-Kanade method

Feature Point Detection Demo

OS X, C++

Develop the A-KAZE method

Object Tracking Demo*OS X, C++*

Develop the Lucas–Kanade optical flow, A-KAZE, and Michael’s visualization
Test interactive UI, simple game using gestures

Color Histogram Demo*OS X, C++*

Test for detecting skin color using HSV segmentation

OpenCV + IPP + TBB Build*Windows, C++*

Optimize for CPU multicore performance for using 3 webcams concurrently

Firebase Demo

FFT Demo*HTML*

Test for online-measurement of FFT to analyze shaking frequency using accelerometer

SmartEyeglass Demo

Beacon Detection Demo*Android, Java*

Develop the BlueTooth signal detection and control intents in android system

100 Pages Slideshow Test*Android, Java***Sound Control Test***Android, Java***Real-time Data Display Test using Firebase***Android, Java*

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Annual Report 2014

The following report has been prepared to provide updated information on the current project since April 2014.

Through the experience of the application development for various devices, there was a chance to use a lot of new languages. I took part in the 3 business projects, and created 8 demo projects so far. In the projects, I coded the language Java, and Objective-C

which used on Android, and iOS. I created not only an application for iPhone, and Android Phone, but also wearable devices such as Google glass.

In addition, I analyzed game probability through a simulation, blackbox test for sensor data of a device, and created web pages. MATLAB, Processing, Android NDK, HTML, Javascript languages are used for the projects occasionally.

Business Projects:

Dynamo (Disney Mobile)

Gesture Recognition

Recognize 4 gestures using real-time linear acceleration method

Android

Blackbox Test

Test 3 axis accelerometer from the sensor data

Android

music Chef (ET²)

Maintenance

Debug the clients

iOS, Android

MIYAGI POKERUN (Honda Motor)

Poker Judgement

Decide a poker hands, score, and case test

Java, Android, iOS

Poker Probability Simulation

Analyze a poker game probability using a selection algorithm

MATLAB

Demo Projects:

Omron HVC Demo

HappyCam Demo

Test an auto-camera demo using user's face

Android

SmartEyeglass Demo

Breakout Game

Develop rotation vector for control

Android

Shooting Game

Develop rotation vector for control using cylindrical projection

Android

FFmpeg Library Test

Bitmap Player

Run a FFMpeg library using Native-C, not completed

Android NDK

Moto 360 Demo

Watch Face

Test an image on display

Android

Dynamo Test

Gesture Recognition, UDP Connection

Test dynamo gestures with a computer network

iOS

Gesture Recognition

Test a pattern recognition for non-real-time method

Android

SmartEyeglass Test

Breakout Game

Processing

Test each game logic, and visualization

Shooting Game

Processing

Test each game logic, and visualization

Bike Game

Processing

Test each game logic, and visualization

Google Glass Demo

Virtual Buttons

Android

Run a Vuforia demo

Firework

Processing

Display using a sensor data, and test the frame speed

Web Test

Map for MIYAGI POKERUN

HTML, Javascript

Draw a contour of japan map using d3.js library