

# Eui Won Kim

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## Education

**University of California, San Diego**  
B.S. in Computer Science

Sept 2013 - Present  
Graduation Date: March 2016

## Skills

### Languages

- Java
- C/C++
- Python
- HTML/CSS
- SQL

### System/Tools/Platforms

- UNIX/LINUX
- GDB
- GIT
- Amazon Web Services
- Google app-engine

### Methodology

- Agile Development
- Modular Programming
- Design Patterns

## Android Projects

### Route

- Developed a travel planning app that organizes keeps track of your travel bucket-list.
- Increase performance by caching image data from Yelp API to reduce loading time.
- Implemented Yelp and Facebook API modules.

### Study Buddy

- Developed a flash card app with pop up notification.
- Integrated Parse API to manage data into cloud platform.
- Managed stack cycle to mitigate activity stack for better app flow. .

### Place-its

- Developed a daily planner with google map integration.
- Used Google app-engine for client server communication to store data.
- Implemented notification function that is triggered by user's geo-location using geo-fencing.

## Web Projects

### Personal website

- Created a personal website modifying HTML, css, and javascript of html5up template.

### CSELab waitlist

- Built a simple webpage for more efficient tutor waitlist system for students using Bootstrap.
- Used SQL for data queries and storing in to AWS database.
- Created simple hidden chat panel with PHP and CSS.

## Hardware Projects

### iRobot Surveillance Bot (python/c++)

- Modified iRobot create into a home security robot.
- Developed custom APIs on mbed's microcontroller to control Adafruit's ultrasound sensor, Oled, accelerometer and stepper motors using the data sheet.
- Implemented I2C communication function for Oled and accelerometer.
- Used beaglebone black to host fast switch vibration sensors through GPIO.
- Used capacitor to meet the power thresh hold to trigger the GPIO on the BBB.

### **iRobot 2 + robot arm (C++)**

- Integrated DC motor mechanical arm on to iRobot to pick up balls.
- Mounted trim pots in each joint to the Arduino to read the sensor value to determine the arm position.
- Implemented the module to control arm from the master RoS Node which was programmed into Arduino Uno.
- Implemented RoS Node in python to control the Arm.

## **Network & Security Projects**

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### **Mininet Router (C++)**

- Implemented a router on Mininet network.
- Distinguish between UDP, TCP, IP packets to establish TCP hand shake and transfer data.
- Implemented correct Hop algorithm to other virtual routers and servers with different MAC addresses.

### **Sliding window protocol (C)**

- Implemented the sliding window protocol algorithm
- Created custom Frame format and used the header data for acknowledgement between sender and receiver threads.

### **In-path network attack (python)**

- Implemented a man in the middle attack that injects specific iframe into a targeted HTML page.
- Used Scapy python library to inspect flying by IP packets and modified them.

### **Buffer and Integer Overflow (C++)**

- Understood and identified the vulnerability of a program of buffer and integer overflow.
- Exploited these vulnerability by overwriting the return address in a virtual system with MIPS and x86 architecture.

### **vTable Overflow (C++)**

- Used GDB to understand the virtual method table mechanism.
- Exploited the run-time method binding to overwrite the vtable pointer to the different vtable that contained the shellcode.

## **Activities/Organizations**

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### **Android Studio Club** *Fall 2013 - Spring 2014*

- Head of Education Department – Taught new members the basics of Android features and how to develop apps.
- Cooperated in project teams to develop Android apps.

### **UCSD Hub Network pitch contest** *Fall 2013*

- Pitched an App idea that Gamifies user's daily goals and Bucket-List.
  - Tied 1st-place at Hub-network elevator pitch competition hosted by Rady's Business School of UCSD.
- \$500 award for 1st place.