

Miguel Ángel Amador Nava

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EDUCATION

Instituto Politécnico Nacional – Escuela Superior de Cómputo

Computer Systems Engineering

Graduating in December 2019

GPA 8.13/10

MAJOR PROJECTS

Robot prototypes to clean pools

February 2019 – December 2019

Robot prototypes to clean pools in distributed way

- They are being developed with microcontrollers, Wi-Fi modules, ultrasonic sensors, gyroscopes, etc.
- They have communication with a server implemented in Java whose purpose is to distribute the work depending of the swimming pool size and how many prototypes are acopled with it.

Hidder

June 2018

Steganography project with audio

- Using Cryptography algorithms (DES and AES with their different modes of operation) it encrypts data in order to hide it in wav files.
- The wav files do not increase in size. Implemented in Java.

Othello

June 2019

Othello game for playing online

- Each player is connected with other through the servers, they use datagram and flow sockets.
- Implemented in Java, the servers build a dynamic ring network with multicast sockets.

Pacman

June 2018

Game controlled by frequencies of a flute

- Implemented with Discrete Fourier Transform as so to detect the musical notes and control the Pacman movement.
- It was developed with C language and Scratch with an architecture client – server.

Guitar Tuner

Present

440 Hz Guitar tuner

- Implemented using Fast Fourier Transform for to detect the frequencies in which the strings of a guitar are tuned.
- The algorithm is implemented, the user interface is being developed for android.

Distributed application for file transfer

June 2019

Application for searching files and downloading distributed

- The applications running are a node in a ring network. Each node can request a file and download distributed if it is found.
- Implemented with datagrams, flow sockets and RMI in Java.

Mathematical Simulations

June 2017

Platform for to assign homework to students

- Implemented vector addition and parabolic motion in Canvas with JavaScript as so to be assigned like homework;
- Backend implemented with JavaServer Faces and Hibernate, it uses Google login and messaging.

Micro-Photoshop

June 2016

Application for to apply image filters

- Implemented in Java SE for different image types with filters like sepia, black and white, grayscale, etc.

Video Player

June 2016

Application for play videos by console

- Developed with C and C++ using multithreading and VLC code source.
- It was developed in order to show the use double linked lists in Data Structures subject.

SKILLS

PROGRAMMING LANGUAGES

4 years: C
3 years: Java
2 years: Java Script, VHDL
1 years: C++
3 months: Python, Shell

TECHNOLOGIES

HTML, CSS, XML, Fabric Js, SQL, Git, VirtualBox, Unix/Bash, Android SDK, Hibernate, Java Server Faces, Linux Embedded

ONLINE COURSES

Digital Signal Processing (École Polytechnique Fédérale de Lausanne 2018)