Marko Vejnović

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EDUCATION

Northwestern University	September 2019 - Spring 2023
Masters & Bachelors in Electrical Enginering	*3.64 GPA*
Bachelors in Computer Science	

United World College Changshu China	August 2017 - May 2019
International Baccelaurate	*Overall Grade: 82.2%*

EXPERIENCE

Floorcenter d.o.o.	Jan. 2021 - Aug. 2021
Software Engineer	*Banja Luka, Bosnia & Herzegovina*

· Created a propietary solution for automating the labelling and tracking of individual wood boards in the manufacturing process.
· Enabled the company to compare different suppliers' overall final yield.
· Whole-stack application in *PHP* with *Laravel*, *Vue* and an app on *Android Native*.

Northwestern University, Center for Robotics and Biosystems	Jan 2020. - March 2020.
Undergraduate Research Assistant in Robotics	*Evanston, Illinois*

· Evaluated the performance of various design options in multiple projects that the department was working on.
· Performed research on achieving stable flight of an unbalanced drone.
· Designed & Assembled PCB Layouts.

UNAING	Jun. 2019 - Aug. 2019
Software Engineer	*Banja Luka, Bosnia & Herzegovina*

· Simplified Architectural Labor in *Autodesk Revit* by creating a plugin for automatic thermal insulation marking.

Zoran Kuvać	Aug. 2019 - Sep. 2019
Web Developer	*Banja Luka, Bosnia & Herzegovina*

· Improved outreach and customer ease-of-contact by creating a website on *React* (www.zorankuvac.com).

PROJECTS

CM4 PoE+ RAID1 High Redundancy Low Power General Purpose Server	Sept. 2021 - Present

· A SATA1 1U high data redundancy general purpose server.
· Completely powered off of PoE+ with a total $P_{load} < 25.5$W.
· Easily clusterable.

DIY Gibson Flying V Clone	Jul. 2018

· A completely handmade Gibson Flying V.
· Custom, handwound AlNiCo pickups with custom accompanying passive electronics.

Ikap	Feb. 2018

· A successful *Java & Bootstrap* solution for managing the logistics of a shared kitchen in UWC Changshu China.

USB Arduino-based Portable Oscilloscope Apr. 2016

· A Portable Oscilloscope, awarded with the Gold Prize on *Tesla Fest 2016*.
· Enables waveform analysis on the go paired with an Android device
· Application on *Android Native* and *C++* on Arduino.

Automated Camera Slider Mar. 2015

· A cheap and robust solution for the problem of camera motion in stop motion animation.
· Enables the animator to program the camera motions either on the built-in screen or through pairing with the industry standard software *Dragonframe*.
· Four degrees of freedom allow for various camera motion.

RESEARCH

The Frequency Response of the MXR Microamp Amplifier July 2018

· Tested the MXR Microamp amplifier which is used as a guitar boost pedal.
· Expected a flat frequency response.
· Successful experiment with the resulting frequency response being flat in the operarting range.

The Effect of Pickup Position on the Response of an Electric Guitar October 2018

· Investigated the effects of pickup position on the frequency response of a guitar's harmonics.
· Automated detection of harmonic peaks.
· Inconclusive results likely due to a combination of inconsistent waveform deterioration and string-plucking, manual errors.

AWARDS

Northwestern Scholarship, Buffet Institute Grant, Davis UWC Scholarship	2019-2023
System for Organizing Small Aeroclubs	Silver Prize at *INOST*, Banja Luka 2017
USB Arduino-based Portable Oscilloscope	Gold Prize at *Tesla Fest*, Novi Sad 2016
Arduino Camera Slider	Silver Prize at *INOST*, Banja Luka 2015
Portable Science Experiments Coiffer	Gold Prize at *INOST*, Banja Luka 2014

ABILITIES

Natural Languages	English, Serbian, Croatian, Bosnian, German (intermediate)
Drawing, Modelling & Analysis	AutoCAD, Solidworks, EagleCAD, KiCad
Office Software	Microsoft Office, LibreOffice
General Languages	x86ASM, C, C++, C#, Objective-C, Java, Javascript, Python, PHP, Kotlin, Bash
Data Processing	Numpy, Scipy, Sympy, Matlab
Web Technologies	HTML, CSS, JS, Typescript, React, Flask, Vue, Laravel, Node.js, JQuery REST, SOAP, HTTP
Mobile Technologies	Android SDK
Database Technologies	MySQL, PostgreSQL, SQLite
Data Description Technologies	XML, JSON, YAML
Typesetting Systems	LaTeX
Embedded Systems	Arduino, AVR, PIC (mikroC)
System Administration	Linux (intermediate), Windows (intermediate)
Design and Film Technologies	Photoshop, Illustrator, Audition, Premiere Pro
Desktop Technologies	GTK, Qt, Winforms, MFC
Tools	Git, Vim, POSIX
Manufacturing	Woodworking, General Workshop Handtool Use, Milling, 3D Printing