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# Job Description – Modular Instrument Project

**Title:** Java and MaxMSP Software Developer
**Salary Scale:** Common rate, to be fixed between us.
**Duration:** Three months, maybe more
**Start Date:** As soon as possible
**Job time:** Full time or 3/4 time, if possible
**Location:** Anywhere: If i find the right person to work with, i'll move anywhere for the next three months.

**Job Summary:**
I'm looking for a Java and Max/MSP developer, to work with me on a complex modular audio instrument project, with lots of interfaces, events recording and automation and complex subtractive sound synthesis.

**Key Skills that i'm looking for:**
  - Really excellent programming skills in Java, with good experience in serialization, and excellent programming skills in Max/MSP.
  - Experience in various sound synthesis techniques in Max, such as subtractive and additive synthesis.

**Other Welcome Skills:**
  - Experience in real-time audio manipulation by interfaces, Awareness of latency and other related issues.
  - If you are also experienced in C development of Max externals objects, and/or well experienced with all the openGL max objects, this is even better.

**Eventually: Two Developers:** I'm wondering eventually to employ two developers at the same time. Both of them need to have experience of both Java and MaxMSP. One of them would have experience in additive/subtractive synthesis in Max and be really at ease with all common MSP objects. One of them would be really at ease with serialization in Java.

**Detailed Job & Project Description:**

You will help me to code (and find the best way to code) my project in Java & Max, restarting from nothing. My experience of Java can sometimes be light on some sides, so i hope you to lead me on theses aspects during building the project.

The project is based on many years of personal musical theory research and instruments experimentations using Max. We will structure the project in the clearest modular way possible, from the beginning, restarting from nothing. This will be structured with Modules (A bit like the Vizzie structure, but inside Java), of three basic types:
(1.) Interfaces: Many interchangeable interfaces: Wacom-screen (see my blog*), iPhone, iPad, magic Trackpad, etc.
(2.) "instrument-engines": The heart of the instrument itself: Different types of experiments of screen-keyboards (sometimes moving in real-time) dealing with just intonation.
(3.) Sound synthesis: Different interchangeable sound experiments to be used by one "instrument-engine".

An "instrument" = A combination of different modules of the three types (containing various mxj objects corresponding to the modules, theses java objects sharing some static data***) would be saved as a max patcher. All the UI and the audio will be made in Max. Java will be used to code all the algorithmic part, and to manage LOTS of data: Each of these 3 basic type of Modules will come with lots of presets possibilities**, real-time events recording, automation (of

every single numberbox in Max), and saving. We will try to keep a really good object-oriented structure inside Java for the whole project. Apart from building this main structural part, you will also work on:
- Interfaces Modules (1.) : Interfaces testing, smoothing, interpolation of the values, recording and automation tests.
- Sound synthesis Modules (3.) : Recreating as a module and improving, some of my sound synthesis, and new ones.
…While i'll personally concentrate on Modules (2.)

The right candidate will have a creative and analytical personality with very high quality standards and an autonomous and results orientated working style, and will be proactive and innovative with the ability to work flexibly and quickly.

Blog I just started about the project, with few images and sounds :
*  musique.alexandrehd.org
Max forum topics related to the project :
** cycling74.com/forums/topic.php?id=30182
cycling74.com/forums/topic.php?id=31145
*** cycling74.com/forums/topic.php?id=26312


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