

Music Technology Software Developer - Independent Contractor:

Job Overview: Outlier Technology, LLC is seeking a music technology software engineer to assist in the development of a computer vision, machine learning, and music-based augmented reality neurorehabilitation platform for Alzheimer's disease patients. The ideal candidate will have deep fluency in computer music, music composition, Python 3, Max/MSP, object-oriented programming (**OOP**), and Github. Moderate to extensive experience designing graphical user interfaces (**GUIs**), and integrating computer vision, machine learning, and/or AI techniques into computer music is also desired. A proven track record of strong logic skills, building sophisticated, efficient, creative or artistically engaging software systems, and developing solutions to complex technical problems is also desired. The contract work will be 2 man-months, which can be distributed as part time work over 2-4 months. Work will focus on developing features that integrate movement and music, writing efficient and testable code, building responsive user interfaces, and optimizing/refactoring existing components. The position is fully remote, with regular Zoom meetings and collaboration with a highly interdisciplinary team. While U.S. citizenship is not a requirement, NIH stipulations on this project require all remote work to be performed in the U.S. Compensation will be based on skills and experience. Target start date is **on or before Nov. 1, 2025**.

Position responsibilities:

- Architect, and implement advanced music software features from design specifications
- Write clean, modular, and highly efficient code with an emphasis on scalability and maintainability
- Integrate computer vision and machine learning modules into the music software framework
- Manage code with detailed documentation and version control via GitHub
- Develop and refine intuitive, engaging, and responsive graphical user interfaces
- Work in an agile environment to release software units at periodic schedules
- Write robust unit tests and perform debugging and optimization.
- Collaborate with designers, researchers, and other developers to define software requirements
- Participate in Zoom meetings to provide software updates and/or discuss production issues

Job Qualifications and Skill Sets:

- Doctorate degree (or equivalent level expertise) in computer music, music technology, intermedia, digital arts, computer science, software engineering, or related fields
- Demonstrated expertise in Python 3 and Max/MSP
- Advanced knowledge of object-oriented programming principles and software architecture
- Experience developing interactive, real-time audio/music applications and manipulating audio and MIDI
- Strong command of at least one compiled language (e.g., C++, Java, or C#)
- Skilled in GUI/UX design for creative applications
- Familiar with scripting languages (e.g., JavaScript, Ruby, or PHP)
- Proficient in working across multiple platforms (Windows, Mac, Linux) and command-line interface
- Confident with Git, version control workflows, and CI/CD practices
- Experience with cloud services (AWS, Google Cloud, or Azure) and build tools (e.g., Gradle, Maven)
- Strong problem-solving, communication, and people skills, with a positive mindset for collaborative R&D
- Demonstrated ability to deliver results in interdisciplinary, research-driven environments

Desired Experience with:

- Computational approaches to music theory and composition
- Development of real time generative music systems or data-driven music synthesis/manipulation
- Machine learning and/or computer vision or human-computer interactions for interactive music interfaces
- Feature extraction and music information retrieval

Outlier Technology, LLC is an early-stage neuroscience innovation start-up and the recent recipient of Phase I & 2 SBIR funding from the National Institute of Aging and the 2023 & 2024 Catalyst Award from the National Academy of Medicine. Our current work explores the use of personalized, AI-driven music tools to improve cognitive and emotional wellbeing in individuals with Alzheimer's disease. For more information on the current job offering, please email info@outliertechnology.com. Visit www.outliertechnology.com for additional information on Outlier's team.

🤔 **a)** What is the first consecutive sequence in pi that is divisible by both 3 and 37? **b)** Where in pi is that sequence located? If the solution to part **a)** is ##### and this solution starts at **b)** pi's *****th decimal place, visit a#####b*****.com (e.g. if the solution is 7189, starting at the 8359th decimal place, visit a7189b8359.com) 🤔