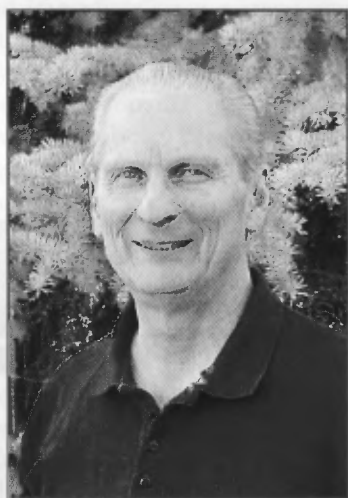


# Integrating Power-User Applications

## Part 2 of 2

By JOHN KUZMICH, JR.



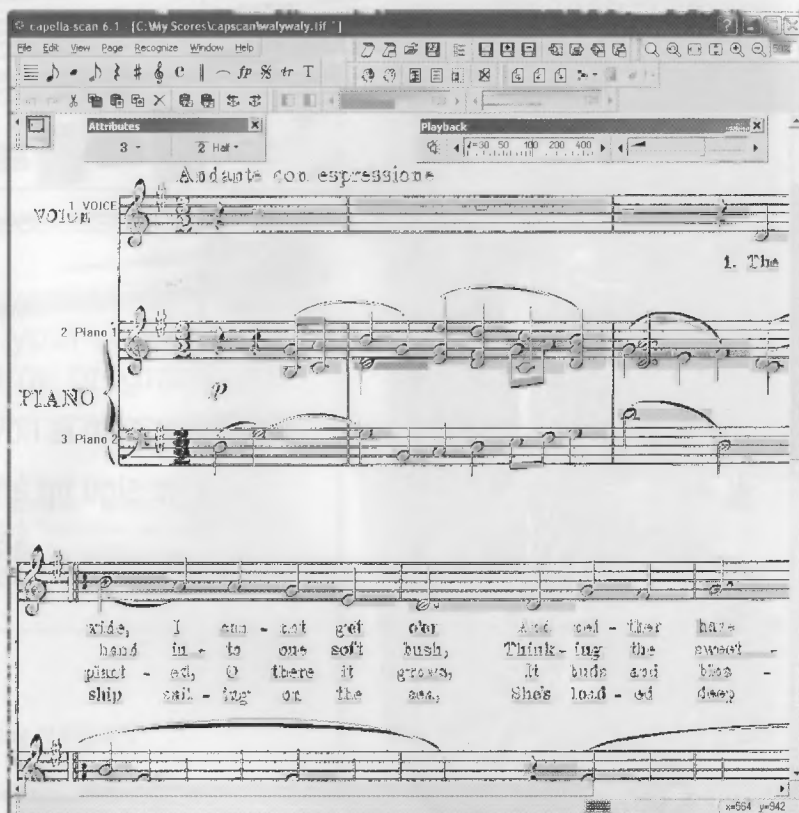
Dr. Kuzmich is a nationally-known music educator with more than 30 years of teaching experience. He has certification from TI:ME (Technology Institute for Music Educators) to serve as a training instructor throughout the country. His academic background also includes a Ph.D. in comprehensive musicianship.

As a freelance author, he has more than 250 articles and five textbooks published. As a clinician, Dr. Kuzmich frequently participates in workshops throughout the U.S. and several foreign countries. For more information, visit his Web site: [www.kuzmich.com](http://www.kuzmich.com).

**W**e learned in part one that power-user applications can help music educators do more work in less time. In this installment, we will cover music scanning, music scoring by microphone and MIDI keyboard, and converting PDF scores into music notation files. Many of the following products have downloadable demos, which I strongly recommend taking a look at.

### Music Scanning

There are several ways to input printed music into your music in a notation program, and scanning is by far the fastest, most time-efficient way to go.



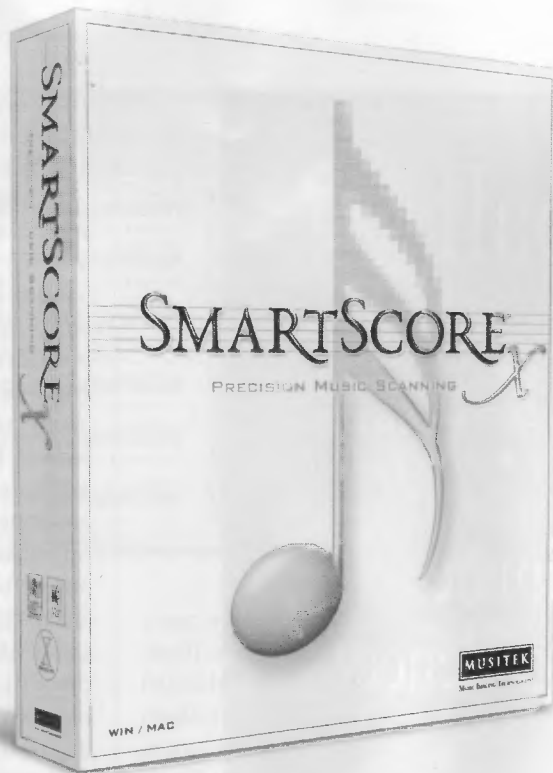
Flatbed scanners are amazingly fast, accurate, and inexpensive. Lighting fast computers with robust RAM, fast CPUs, and huge hard drives have brought music scanning accuracy up to the high 90 percents. In the last three years, significant progress has been made in text optical character recognition, which means that the time is right to get into music scanning. In virtually no time, it is possible to create music scores from printed scores or parts, create accompaniments, transpose parts into friendlier ranges, and scan music to use in sequencing or other editing programs. Programs can also be used

to re-arrange or extract parts and create scores and MIDI files to put on Web pages. Some of today's music scanning software products even have full notation editors and built-in sequencers, making them true power-user applications.

There are two types of music scanning programs: lite versions that just scan the notes, rhythms, time and key signatures and ties such as SmartScore Lite and PhotoScore Lite bundled with notation software; and the top tier, SmartScore Professional, PhotoScore Ultimate, and Sharp-Eye, which scan everything on the page including articulations, dynamics, slurs, lyrics, text, titles, rehearsal markings, and guitar tablatures.

## The Music Scanning Leaders

The oldest of the elite music scanning programs is SmartScore X by Musitek [www.smartscore.com]. This landmark application has five versions to best meet users' needs, along with different pricings and product features. Their Pro edition processes up to 36 staves per system, including super-accurate chord symbols, fretboard, and percussion line recognition. The Songbook edition scans up to three staves per system (vocal/piano) with the abil-



ity to transpose and print entire songs seconds after scanning. The MIDI edition scans up to four staves per system with notation and MIDI editing, and applies different MIDI instruments to voices as well as parts. The Piano edition scans two staves per systems but with the ability to create audition piano arrangements in seconds. Then users can play along or mute one hand while playing back the other at various tempos. The Guitar edition scans only one staff, allowing users to listen to any piece of written music before learning it.

One of SmartScore's strengths is that it has a complete sequencing function capable of on-the-fly instrument changes. The Pro edition can export scores to Finale or Sibelius as a PDF or MusicXML file. Nearly all PDFs are accurately recognized, including those in color or with low resolution. SmartScore has great notation editing capabilities that allow users to work without a separate notation application. I particularly like the hands-off scanner and dpi control. It transposes by key signature or clef, extracts parts, resizes and re-spaces measures, staves, and systems. The auto error check provides proof that scans are ready. SmartScore can even burn rehearsal audio CDs. The handy VST and AU digital audio plug-ins include Garrigan and MOTU libraries. Playback properties of nearly

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every symbol can now be changed using the Properties tool. Download the demo and discover it for yourself.

Musitek also manufactures SmartScore Lite, which is included in Finale 2008. SmartScore Lite can handle most basic scans, including multi-measure rests, grace notes, repeat measures with slashes, and most symbols. A handy quick-start video inside of Finale 2008 explains the basics. Finale 2008 now has automatic configurations in its scanning program. Sometimes, SmartScore Lite has an advantage over more powerful music scanning tools because trying to scan everything can get a little complicated, and sometimes it is possible to get accurate scans without scanning everything in the score.

Another option worth looking at is PhotoScore Ultimate by Neuratron [[www.neuratron.com](http://www.neuratron.com)]. This formidable competitor to SmartScore Pro scans and reads printed music quickly and accurately. It is easy to use and plays back scanned music. The results can be used in MIDI sequencing and editing software. PhotoScore Ultimate also reads handwritten music and has impressive capacity, handling up to 64 staves per page, a 400 page score, and 128th-note value. Files can be saved in MusicXML or NIFF format and opened in Finale or another music program for rearranging and extracting parts. MIDI files can be opened in Cubase, Sonar, or another sequencing program, or files can be converted and saved in WAV (Window) or AIFF (Mac OS X) format for burning to CD or converting to MP3.

PhotoScore MIDI Lite 5 is an amazing application included in Sibelius 5. It reads: notes and chords, including ties, tail direction, beams, and flags; rests, in up to two voices per staff; flats, sharps and naturals; treble and bass clefs, key signatures, and time signatures; 5-line staves (normal and small); standard bar lines; 6-line guitar tab staves; and many format variations. It won't recognize tuplets or triplets, appoggiatura, cue notes, text, articulation marks, slurs, hairpins, percussion





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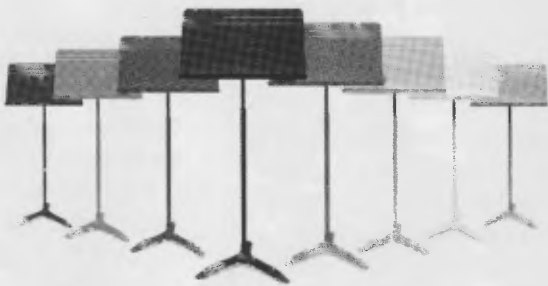
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## Alternate Music Scoring by Mic or MIDI Keyboard

AudioScore Professional 3 by Neuratron [[www.neuratron.com/audioscore.htm](http://www.neuratron.com/audioscore.htm)] can create scores from a musical performance via microphone or MIDI keyboard. Mic-to-Score J Automatic Notation is the feature that lets users create scores by singing or playing into a computer using only a microphone. Compositions can be transferred into Sibelius for editing or saved as MusicXML, NIFF, MIDI and WAV files to be opened in other programs such as Finale and Cubase. AudioScore Professional 3 uses highly sophisticated pitch recognition and rhythm analysis techniques to ensure it produces the highest quality notation and layout, with virtually no user intervention. With instant graphic feedback about the pitch of the performance, it is possible to see where mistakes are being made, so improvements can be made mid-song.

## Alternatives to Converting PDF Scores to Music Files

While there are many applications that convert PDF scores to music scores, take a look at PDFtoMusic and PDFtoMusic Pro by Myriad software [[www.myriad-online.com](http://www.myriad-online.com)]. PDFtoMusic Pro is great for converting music from older notation programs such as Encore, Mosaic, and HB Engraver to newer notation programs. What makes PDFtoMusic Pro so powerful is that it recognizes the music fonts and staff lines drawn by older programs. The PDF file has intelligent graphics rather than just a bunch of pixels from a scan, so it can do a much better job of recognition, creating a more accurate MusicXML file.

Here is a great litmus test for demonstrating power-user authenticity. Download a demo version of PDFtoMusic Pro [[store.recordare.com/pdf-tomusicpro.html](http://store.recordare.com/pdf-tomusicpro.html)], and then download and open a free PDF file entitled "Wabash Cannonball" [[www.sheetmusic-digital.com/pdf/2/9/2/19000292.pdf](http://www.sheetmusic-digital.com/pdf/2/9/2/19000292.pdf)]. An open box comes up automatically

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on startup. Select the saved PDF file and PDFtoMusic Pro will go through all the steps of recognizing the file. Upon hitting the Play button in the toolbar, PDFtoMusic Pro will not only play the file back, it will sing the lyrics, too. "Wabash Cannonball" has a pickup bar and a repeat with four verses, and PDFtoMusic Pro handles all of it. Stop the playback and use File > Export > MusicXML to save the MusicXML file. Now start Finale 2008 and use the MusicXML import feature on the Launch Window to read the MusicXML file in Finale. The playback stays intact with the pickup bar and all four repeats. (Finale doesn't sing the lyrics, though.) This process can be repeated with Sibelius, but the results don't look as good unless it is used with Sibelius 5.1, which has MusicXML capability. Some sharp-eyed people may notice that some of the chords come across as chords in Finale (the first and last systems) while others come across as text (the middle two systems). This can be fixed in PDFtoMusic Pro by right-clicking on the text and changing it from Direction to Chord text. The tricky thing with PDFs is to make sure they are generated by music notation programs, rather than scanned in from paper.

PDFtoMusic Pro can also transfer music scores from other software notation products that do not support MusicXML, like Band-In-A-Box and Digital Performer, to those that do. The process is simple: print a score from any non-MusicXML to a PDF file. For Windows, this means using a free program like CutePDF or PDF995, or a full-feature product like Adobe Acrobat or ScanSoft PDF Converter Professional 5. The PDF file now has more intelligent graphics, rather than just a bunch of pixels from a scan and can be saved as a MusicXML file. Import the MusicXML file into Finale, Sibelius, or any other MusicXML reader.

## In Closing

There is no doubt about it, power-user applications can help music composition products flow smoother and faster. Have fun exploring the creative music technology offered by these programs. 

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