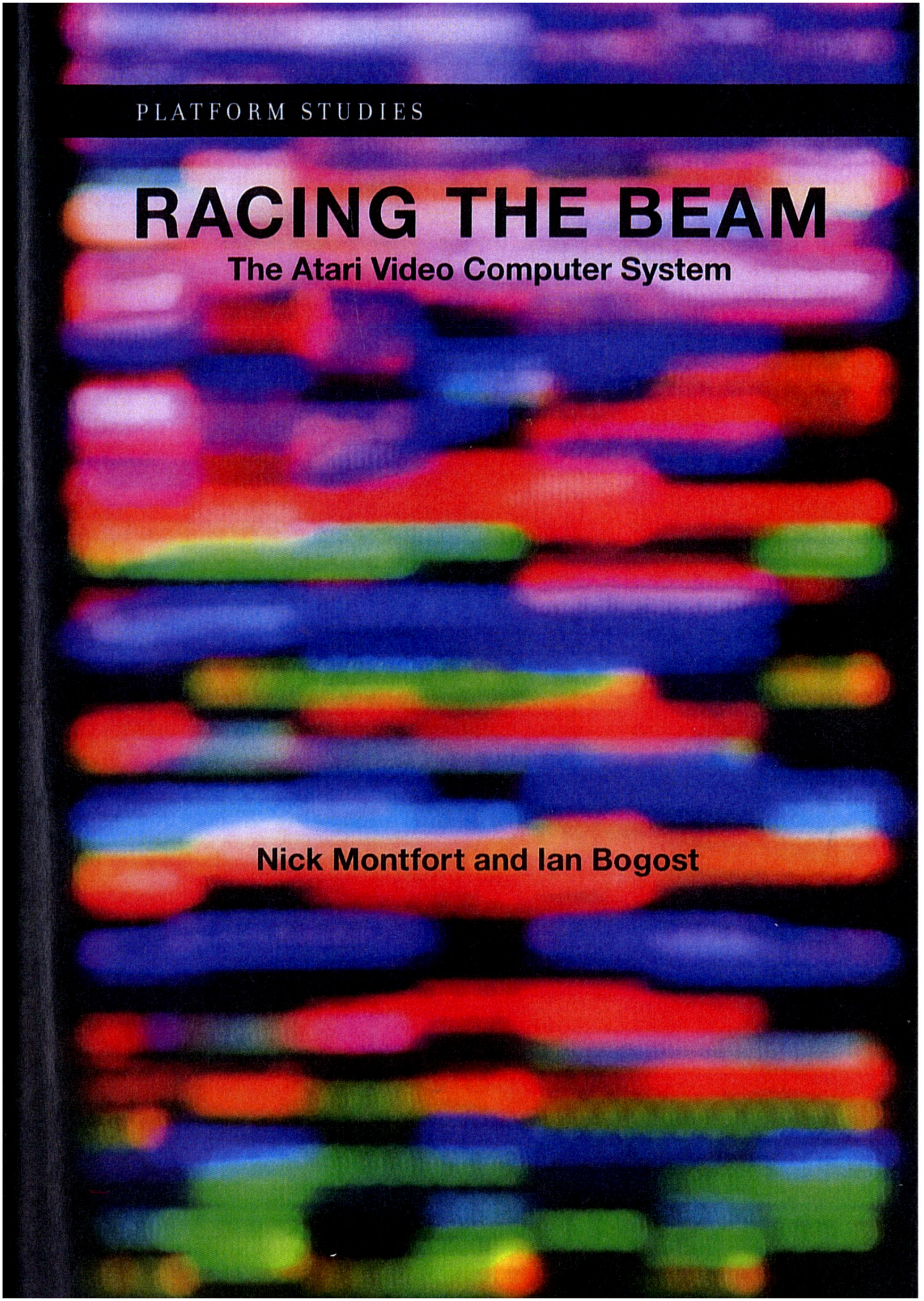
PLATFORM STUDIES
RACING THE BEAM
The Atari Video Computer System
Nick Montfort and Ian Bogost

rendering requirements, the sprite-missile-ball graphics, and so forth—would have left this hypothetical, modified Atari VCS with a similar look and feel when it comes to programming and play. The TIA is strongly tied to the nature of the television's CRT display. In the context of the home console experience of 1977–1983, that the system was "video" was about as important as that it was "computer." The Atari VCS is certainly not just a "video" device in the generic sense of being able to display a moving image: its TIA was designed to interface with a particular type of video and audio hardware, a television set. All of its unique features emanate from this.

Perhaps because of the special nature of the TIA, or perhaps because of the limitless human capacity for technical fascination, programmers have continued to hack at and develop original VCS games. There is a thriving hobbyist community that has picked up the Atari VCS, using and refining emulators, writing disassemblers and development tools, and even manufacturing cartridges and selling them, complete with boxes and manuals. This "homebrew" scene could be seen, strictly speaking, as continuing the commercial life of the Atari VCS, but the community is not very corporate. It operates on the scale of zines and unsigned bands, with most recent ROMs offered for free online—even if they are also sold in limited releases of a few hundred copies in cartridge form.

Although many homebrew programmers are motivated by nostalgia, they are doing more than recreating the glory days of the Atari VCS—they are continuing to discover previously unknown capabilities of the platform. Paul Slocum, who has completed *Combat Rock*, *Synthcart*, and impressive work toward a Homestar Runner game, managed to add a system for background music. Andrew Davie, who did the PAL game *Qb*, devised a way of alternating colors on different frames to achieve the visual effect of more than 128 colors. Thomas Jentzsch, creator of *Jammed* and *Thrust*, devised a new bidirectional scrolling technique and, working with Fabrizio Zavagli, also converted a slew of VCS games between NTSC and PAL. The list of recent technical achievements and recent original games goes on and on.

The Atari VCS has found uses in other domains, blasting into the space of the museum and the worlds of art and music. Yucef Merhi first exhibited a piece including an Atari VCS, *net@ari*, in 1985, and has created a series of *Atari Poetry* works that run on the platform since then—*Atari Poetry* I through *IV*, initially; then, in 2005, *Super Atari Poetry*; *Atari Poethree* in 2006; and, most recently, in 2007, *atari ex machina*. Slocum's band TreeWave and several other musicians have used *Synthcart* as a part of live music performances. In 2006, Mary Flanagan first exhibited her

game studies/new media

"*Racing the Beam* presents not just the technical challenges but the financial, bureaucratic, and scheduling considerations that harried the Atari 2600 VCS programmers. Modern game designers should read this book for the same reason that modern generals study the military campaigns of Alexander and Caesar: the technology is completely different but the principles are the same."
—Chris Crawford, former head of Atari's Games Research Group and cofounder of Storytron

"Montfort and Bogost raise the bar on anyone wishing to talk meaningfully about computer culture. Not only must we interpret these machines, we must first know how they work—and yes, sometimes this means knowing assembly code. From chip to controller, the authors lead us with ease through the Atari 2600 Video Computer System, one of the most emblematic devices in recent mass culture."
—Alexander Galloway, Associate Professor of Culture and Communication, New York University, and author of *Protocol: How Control Exists after Decentralization*

"William Morris famously opined 'You can't have art without resistance in the materials.' In *Racing the Beam*, the inaugural volume in the MIT Press's new Platform Studies series, Montfort and Bogost authoritatively update that dictum for the computer age. This technically rigorous but also (finally) deeply humanistic book is not just a history of a particular platform, but an excavation of how its unique affordances and constraints shaped its capacity for the creative."
—Matthew G. Kirschenbaum, Associate Professor of English, University of Maryland, and author of *Mechanisms: New Media and the Forensic Imagination*

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