Title: Mulholland Revisited

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1. PROGRAM NOTES

Mulholland Revisited is an interactive composition for Yamaha Disklavier / MIDI keyboard and ChucK, integrating real-time interaction between acoustic and electronic elements. By leveraging MIDI input, the piece enables the piano to function as both a performer and a controller, triggering ChucK-generated sound textures in response to live performance.

Inspired by a pivotal phone conversation in *Mulholland Drive* (Lynch, 2001), the work explores the blurred boundary between dream and reality through a dynamic interplay between piano-generated material and algorithmic sound synthesis. The electronic elements emerge as an extension of the piano's acoustic voice,

reinforcing the psychological tension that defines the narrative arc. An homage to David Lynch, the piece mirrors his fascination with fractured identities and surreal atmospheres, immersing the listener in a sonic landscape that expands the piano's traditional interface into new musical and narrative dimensions.

2. PROJECT DESCRIPTION

This project explores real-time algorithmic sound generation and interactive performance through ChucK and MIDI-based control of the Yamaha Disklavier. Using MIDI input from the piano, ChucK dynamically generates electronic textures that evolve in direct response to the pianist's touch, allowing for expressive, bidirectional interaction between the acoustic instrument and digital processing.

Drawing inspiration from *Mulholland Drive* (Lynch, 2001), the composition mirrors the film's dreamlike instability, where sound and memory distort reality. The system is structured around four distinct sonic gestures: (1) a synthesized telephone bell signifying Diane's psychological rupture, (2) a dynamically generated arpeggio that mirrors the tension of her conversation with Camilla, and (3-4) progressively complex textural layers that blur the line between live performance and algorithmic sound synthesis.

By merging real-time programming, MIDI expression, and acoustic-electronic interaction, this project demonstrates how computational tools can extend the performative agency of traditional instruments, offering new modes of storytelling through music. This piece stands in the lineage of the prepared piano, drawing inspiration from innovative approaches to instrument augmentation. It resonates with Andrew McPherson's TouchKeys and Magnetic Resonator Piano, which introduce continuous control and electromagnetically induced resonances to the traditional keyboard. Similarly, it aligns with Dan Trueman's bitKlavier, or "prepared digital piano," which redefines pianistic interaction through temporal

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displacements and algorithmic preparation. Additionally, this work is informed by Palle Dahlstedt's "Living Strings", where the hybridity between the acoustic and the digital creates an evolving, non-static relationship between performer and instrument. Going beyond traditional augmentation paradigms, *Mulholland Revisited* expands the expressive capabilities of the acoustic piano by integrating algorithmic augmentation with film-inspired narrative cues into a unified, interactive performance model.

As a classically trained pianist, I seek to anchor this piece in the exploration and expansion of the piano interface -- not merely treating the instrument as a tool or interface, but allowing it to become the composition itself, with its identity shaped through technological augmentation. The integration of MIDI-driven interaction necessitates a reiterative creative process. Mulholland Revisited thus serves as a proof of concept in which the instrument defines the composition's identity, extending traditional performance interfaces toward new dimensions of expression and proposing a novel dialectic between computer-instrument interfaces and the performer. While this piece aligns with contemporary efforts to conceive new interfaces for musical expression, Perry Cook's principle for designing computer music controllers -- "Make a piece, not an instrument or controller" -- ultimately drives my creative process [1]. While prior systems like TouchKeys or bitKlavier offer new modes of pianistic control, Mulholland Revisited distinguishes itself by embedding narrative structure directly into the performance interface. Instead of treating augmentation as an open-ended extension, the piece ties specific sonic and narrative events, such as the telephone bell, arpeggios, and dialogic cues, to distinct gestures and velocity thresholds, enabling an expressive storytelling model. This bridges narrative cinema and performative interaction in a manner not commonly explored in prior NIME works. This work contributes to the ongoing exploration of narrative-driven musical interfaces by integrating cinematic structure and gesture-based mappings into real-time performance systems. It demonstrates how the augmentation of traditional instruments can serve not only expressive or technical goals, but also narrative and cinematic ones.

3. PERFORMANCE NOTES

The performance involves live interaction between acoustic piano and ChucKgenerated electronic sounds, where MIDI input dynamically shapes the electronic layer. The pianist functions as both a performer and system controller, engaging with MIDI-triggered events to create an interplay between acoustic and digital elements. This interaction is further coordinated with the sampled phone conversation, which is integrated into a newly constructed soundtrack. The live piano performance underscores and interacts with this evolving dialogic soundscape.

Mulholland Revisited

Specific MIDI velocity thresholds determine distinct sonic responses: a staccato, high-velocity attack triggers the telephone bell, while sustained, medium-velocity notes activate arpeggios. In the case of the arpeggios, only soft key presses (velocity < 40) initiate the sequence, producing four consecutive notes that ascend in 2-semitone steps from the fundamental frequency. This structured progression contributes to an evolving harmonic texture that blends with the electronic layer. These mappings enable an intuitive and flexible playing style.

The electronic sounds are designed to synchronize with the piano's chordal and melodic lines, reinforcing an atmosphere of tension and ambiguity. The performer must be attentive to subtle variations in touch, as ChucK's sound generation adapts dynamically to note duration, articulation, and velocity profiles, shaping the expressive and emotional contours of the piece. This requires a performance approach that balances precision with improvisatory awareness, allowing the electronic layer to function not as a static accompaniment but as a responsive counterpart, engaging in an ongoing dialogue with the live piano performance.

A Yamaha Disklavier is required for this piece. If unavailable, the piece can also be adapted for performance on a MIDI-enabled keyboard or hybrid acoustic-digital system with similar input capabilities.



Fig. 1. Installation System





Mulholland Revisited





Fig. 2. Photographs of the performance

4. MEDIA LINK(S)

• Video documentation of *Mulholland Revisited* (performance and system interaction): <u>https://www.youtube.com/watch?v=viQeJR-QNjc</u>

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ETHICAL STANDARDS

This piece fully complies with ethical research guidelines. No human participants or animals were involved in the research, experimentation, or production of this work. Additionally, there are no conflicts of interest, financial or non-financial, associated with this work. All research was conducted in accordance with ethical principles and integrity standards, ensuring transparency and adherence to best practices in academic and scientific research.

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