# Listen to Reason: In Conversation with a Computational Critic

**Daniel Chávez Heras**
King's College London
daniel.chavez@kcl.ac.uk

**Alfonso Sánchez López**
Independent Researcher
escribele.a.alfonso@gmail.com

## Abstract

In this paper we introduce the concept of "inductive conversational interface" as a guiding design principle to develop machine learning applications for aesthetic judgement. Taking film criticism as a case study, we present a basic implementation as a proof of concept, and based on this we suggest future avenues towards a reimagined practice of computational criticism.

## Computational Criticism

Despite having a long and rich intellectual tradition grounded in inductive reasoning, art criticism and its practices are underdeveloped areas in terms of machine learning applications for research in the arts and creative industries.

As a computational problem, aesthetic judgement is usually traced back to *Aesthetic Measure* (Birkhoff 1933). Yet, the nature of judgements of taste as well as the abstraction of critic's qualities by empirical means is at least as old as David Hume's "Of the Standard of Taste" essay, in which he sought to aggregate the judgements of critics to abstract a "a general rule," or model, with which to evaluate the merits of works of art so as to adjudicate on disputes about their quality (Hume 1857).

Prima facie, Hume's standard appears to prefigure modern day recommender systems of the kind commonly used in streaming platforms, in both their inductive logic and empirical mechanisms. However, a closer reading of the eighteenth century philosopher also reveals a significant difference: these systems are not usually designed to produce general rules; they do not solve disputes by adjudicating between conflicting judgements, but instead bypass judgement altogether by producing tokens of prediction tailored to individual preference, often with the explicit goal of maximising consumption (Milano, Taddeo, and Floridi 2020, 960–62).

This design pattern dissolves the shared social space necessary for aesthetic assessment, since privately held preferences of the type mined by recommender systems need no justification; they stand simply for what users like. In contrast, critics are expected to produce not only personal verdicts, but explanations: public assessments grounded in reasons (Carroll 2009, 8).

A defining aspect of judgements made by critics is that the reasons they offer to support their arguments are presented so as to elicit public agreement, and can, by the same token, be publicly contested and refuted (Eagleton 2005, 9–10). Recommendation without assessment is sterile for aesthetics because it cancels the possibility to examine, verify, or contest the judge's explanations, which in turn precludes the forming of meaningful consensus and canons of taste that can be established, challenged or overthrown, collectively.

## Redesigning Critic Machines

To address this issue, we propose to reimagine computational criticism as a series of conversational events mediated by inductive computing. Taking film criticism as a case study, we redesigned the division of labour between critics and computers to stage an exchange between three agents: a film fan, a professional film critic, and a moderator who mediates their exchanges. The first two are computational agents, the third is a human critic.

To train the computational agents, we used an ad-hoc dataset created by extracting features from ~30,000 videos from the YouTube channel *Movieclips*, matched to both their respective comments in the video platform and

to reviews from professional critics scraped from the website *Rotten Tomatoes*. For each of these agents, a large-scale language model (Radford et al. 2019) was fine-tuned using this dataset and deployed as a text generator.

The system works as follows: the human interlocutor initiates the conversation by seeding the system with the title of a film or a clip of their choice, this sets off a response by one agent, which is used as input for the other. The exchange continues recursively and is regulated by the critic, who selects responses, inputs her or his own response in natural language, references a new film or clip, or ends the interaction.

Unlike most recommended systems, our experimental setup does not rely on numerical ratings, stars, or thumbs up or down signals, and although recommendations, discovery or endorsements might occur as a result of the moderator's interaction with the system, its design is not fundamentally prescriptive. Instead, the goal is to computationally abstract, through inductive computing, the types of reasons different audiences offer in support of their judgements, and to present them for scrutiny alongside the clips themselves in a reproducible conversational format.

A key advantage of this conversational design over existing recommender systems is that the exchanges produced through interactions can be followed publicly and in concert with other critics, who can in turn contribute their own judgements and point to their own film referents. The goal of the system is not to cater to individual taste, but to strengthen the network of inter-subjective public judgements that gives criticism its social and cultural significance.

## Applications and Future Research

This experiment is presented as a proof of concept. More research is needed, both in terms of interaction and to integrate data sources and machine learning models. Possible directions include negotiating access to larger film archives, collections and online resources, experimenting with text-to-image transformers, refining the models and developing them through reinforcement learning.

We believe, however, that the core design can be expanded to a working prototype with relatively few additional resources. This would be useful to test the appetite for such a system, for example as a tool in practice-based film and media studies as a way to support new scholarly formats like the video essay (Keathley, Mittell, and Grant 2019; Grant 2016).

## References

Birkhoff, George David. 1933. *Aesthetic Measure*. Reprint 2013 ed. London: Harvard University Press.

Carroll, Noel. 2009. *On Criticism*. New York: Routledge.

Eagleton, Terry. 2005. *The Function of Criticism*. New York: Verso.

Grant, Catherine. 2016. 'The Audiovisual Essay as Performative Research'. *NECSUS. European Journal of Media Studies* 5, no. 2: 255–65.

Hume, David. 1910 [1757]. 'Of the Standard of Taste.' In *English Essays from Sir Philip Sidney to Macaulay*, edited by Charles W. Eliott, 215–36. New York: P F Collier & Son.

Keathley, Christian, Jason Mittell, and Catherine Grant. 2019. *The Videographic Essay: Criticism in Sound and Image*. Montréal: Caboose.

Milano, Silvia, Mariarosaria Taddeo, and Luciano Floridi. 2020. "Recommender Systems and Their Ethical Challenges." *AI & Society*: 1–11.

Radford, Alec, Jeffrey Wu, Rewon Child, David Luan, Dario Amodei, and Ilya Sutskever. 2019. "Language Models Are Unsupervised Multitask Learners." *OpenAI Blog* 1, no. 8, 9.

## Biographies

**Dr. Daniel Chávez Heras** is a Lecturer in Social and Humanistic Computing at King's College London, and a Creative AI Lab fellow. He researches machine vision through creative computing and interdisciplinary design.

**Alfonso Sánchez López** is a computer scientist with fifteen years of experience developing applications for large-scale projects in Mexico and. Canada. He currently leads a team that develops applications to visualize and explore Geospatial Data.