

Coming Together: Composition by Negotiation by Autonomous Multi-Agents

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ABSTRACT

Coming Together is a series of computational creative systems based upon the premise of composition by negotiation – within a controlled musical environment, autonomous multi-agents attempt to converge their data, resulting in a self-organised, dynamic, and musically meaningful performance.

All the *Coming Together* systems involve some aspect of *a priori* structure around which the negotiation by the agents is centered. In the versions demonstrated, the structure presupposes several discrete movements that together form a complete composition of a predetermined length. Characteristics of each movement – density, time signature, tempo – are generated using a fuzzy-logic method of avoiding similarity between succeeding movements.

Two versions of *Coming Together* are described, used in two different musical compositions. The first, for the composition *And One More*, involves agents interacting in real-time, their output being sent via MIDI to a mechanical percussion instrument. This version has nine different agents performing on eighteen different percussion instruments, and includes a live percussionist whose performance is encoded and considered an additional agent.

The second version, for the composition *More Than Four*, involves four agents, whose output is eventually translated into musical notation using *MaxScore*¹, for performance by four instrumentalists. Agent interaction is transcribed to disk prior to performance; at the onset of the performance, a curatorial agent selects previous movements from the database, and chooses from those to create a musically unified composition.

¹ www.computermusicnotation.com