Algorithm is an effective method expressed as a finite list of well-defined instructions for calculating.
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Algorithm is an effective method expressed as a finite list of well-defined instructions for calculating.
Computational Design is the discipline for developing and/or applying computational approaches to problems.

- Algorithm
- Design Process
- Emergence
- Form
- Geometry
- Methodology
- Organization
- Scripting
- Strategy
Emergence. Much coming from little. Simple rules can generate complexity. In this sense, the biothing approaches to generative design practice through the use of computational systems that underscore multiple-scaled expressions. For example, they explore how computational patterns can actively link projects, traverse scales and function.

Mark Burry tracks the development of specific geometric and procedural methods driven by the critical nature of connecting computational from with material form. It is the challenge in identifying how particular mathematical means for generating geometry may not align with rules which relate to scalar issues of structure, materiality and assembly.

Lynn discusses animation and its applications in architecture. Animation is not movement, it is the evolution of a form. The design field deal with space as an environment with forces and motion. While physical forms are often conceived of in terms of statics, the forces of the environment can help inform how these forms take shape.
Design Process is a problem solving method.

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Emergence
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When Code Matters, 2006

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Hull, 1958

Constrained Generative Procedures, 1998

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Greg Lynn, 1999 & 2011

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Geometry of Environment, 1974

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It is an introduction to spatial organization in design. This geometry consists of transformations that are related with the idea of mapping. The first essential transformation is one that does absolutely nothing, the identity transformation; object is left completely unaltered. When the prints of an object are taken, isometrics of the original are produced.

Animate Form, 1999 & 2011

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LOUIS KHAN

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Architecture and Practical Design Computation, 2011

MARK BURRY

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Methodology

Algorithm
Computational Design
Design Process
Emergence
Form
Geometry
Organizational Structure
Programming
Scripting
Strategy

CORRELATION DIAGRAM

Methodology is the systematic, theoretical analysis of the methodologies applied to a field of study.

KEY WORD

Algorithm
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Kahn, 1961
Form and Design

Mitchell, 1990
The Logic of Architecture

Don Kohn, 1972
Universal Transfer

March, 1974
Geometry of Environment

Greg Lynn, 1999
Animate Form

Gero, 1990
Design Prototypes

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All Over Over All

McCullough, 2006
30 Years Of Scripted Space

Mark Barry, 2011
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Organization is an entity that has a collective goal and is linked to an external environment.
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Design  Process
John, 1991
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Brown, 2006
All  Over
Over
All
Constrained  GeneraNng  Procedures, 1998
JOHN  HOLLAND
John  Holland  expands  upon  the  computational  mechanisms  underlying  emergent  systems.  The  system  containing  emergent  characteristics  which  are  the  properties  of  a  ‘model’  can  be  produced.  The  key  feature  of  the  procedures  is  the  ‘transition  function’,  which  is  a  mapping  of  the  possible  states  of  a  system  that  can  arise  from  this  function.

When  Code  Matters, 2006
INGEBORG  M  ROCKER
Simplest  possible  rules  can  yield  highly  complex  behavior.  Algorithmic  structures  represent  abstract  patterns  that  aren’t  necessarily  associated  with  experience  and  perception.  Algorithms  used  to  be  used  to  simplify  complexity,  now  its  used  in  computation  to  generate  complexity.  Architecture  has  always  been  bound  by  code  in  the  form  of  rules.

CORRELATION DIAGRAM

20 Years  Of  Scripted  Space,  2006
MALCOLM  MCCULBUGH
Scripting  is  a  tool  by  which  the  designer  can  more  efficiently  express  and  explore  its  creativity.  Not  simply  a  form  finding  end.  The  use  of  graphical  user  interfaces  allow  designers  to  engage  in  parametric  design  or  task  automation  which  allow  play  and  manipulation  within  the  parameters  of  established  software  without  the  writing  of  any  real  code.

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Scripting
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CORRELATION DIAGRAM

KEY WORD

Algorithm
Computational Design
Design Process
Emergence
Form
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Methodology
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Scripting

Strategy is a high level plan to achieve one or more goals under conditions of uncertainty.
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The book discusses the limitations of the “devil’s advocate” approach to interactions, which he reports can stifle early innovation. Tom puts forth ten other roles that can be helpful in design: anthropologist, experimenter, cross-pollinator, hurdler, collaborator, director, experience architect, set designer, caregiver, and storyteller.
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**CORRELATION DIAGRAM**

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Algorithm
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**Notes on the Synthesis of Form, 1964**

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Algorithm
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Lynn discusses animation and its applications in architecture. Animation is not movement, it is the evolution of a form. The design field deals with space as an environment with forces and motion. While physical forms are often conceived in terms of statics, the forces of the environment can help inform how these forms take shape.

Kahn argues that particular buildings of the same type share an archetypal essence, or “form,” which is transcendent. “Form” and “design” openly acknowledge the tension between the timeless aspects of architecture and the quotidian processes that frame the design and construction of particular buildings.

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**Form**
- Ednie Brown, 2006: All Over All

**Methodology**
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**Organizational Scripting**
- Rocker, 2006: When Code Matters

**Strategy**
- Kelly, 2005: 10 Faces of Parametric Architecture
- Daniel Palermo, 2003: Design without Human Control

**Computational Design**
- Greg Lynn, 1999: Animate Form

**Geometry**
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**Design Process**
- Anonymous, 1964: Notes on the Synthesis of Form

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Design can be defined as the process of creative problem-solving, a process of creative, constructive behavior. The process of design has a logical sequence of events: accept situation, analyse, define, ideate, select, implement, evaluate.
CORRELATION DIAGRAM

Algorithm
Computational Design
Design Process
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**Animate Form, 1999 & 2011**

**GREG LYNN**

Lynn discusses animation and its applications in architecture. Animation is not movement; it is the evolution of a form. The design field deal with space as an environment with forces and motion. While physical forms are often conceived of in terms of statics, the forces of the environment can help inform how these forms take shape.

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**Geometry of Environment, 1974**

**LIONEL MARCH**

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**Form and Design, 1961**

**LOUIS KHAN**

Kahn argues that particular buildings of the same type share an archetypal essence, or “form,” which is transendent. “form” and “design” openly acknowledge the tension between the timeless aspects of architecture and the quotidian processes that frame the design and construction of particular buildings.

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**Architecture and Practical Design Computation, 2011**

**MARK BURRY**

Mark Burry tracks the development of specific geometric and procedural methods driven by the critical nature of connecting computational from with material form. It is the challenge in identifying how particular mathematical means for generating geometry may not align with rules which relate to scalar issues of structure, materiality and assembly.

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**All Over Over All, 2005**

**PIA EDNIE BROWN**

Emergence. Much coming from little. Simple rules can generate complexity. In this sense, the birthing approaches to generative design practice through the use of computational systems that underscore multiple-scaled expressions. For example, they explore how computational patterns can actively link projects, traverse scales and function.
CORRELATION DIAGRAM

Methodology is the systematic, theoretical analysis of the methods applied to a field of study.

KEY WORD
- Algorithm
- Computational Design
- Design Process
- Emergence
- Form
- Geometry
- Methodology
- Organization
- Scripting
- Strategy
This article discusses an elaboration of models. It then introduces and describes a knowledge representation schema for design called design prototypes. This schema supports the initiation and continuation of the act of designing. Design prototypes are shown to provide a suitable framework to distinguish routine, innovative and creative design.
Algorithm
Emergence
Form
Geometry
Methodology
OrganizaNon
ScripNng
Strategy
Computational Design
Design Process
Form
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Methodology
Organization
Scripting

Strategy is a high level plan to achieve one or more goals under conditions of uncertainty.
Simplest possible rules can yield highly complex behavior. Algorithmic structures represent abstract patterns that aren’t necessarily associated with experience and perception. Algorithms used to be used to simplify complexity, now its used in computation to generate complexity. Architecture has always been bound by code in the form of rules.
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is a pervasive phenomenon found in contexts as different as games, seeds, and scientific models.

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The book introduces the design/usage research techniques, presented alphabetically as well as with numerical hints indicating which is best suited to different phases of a project. The methods and techniques can provide us with a chance to structure conversations, which can help us better understand with people, and as a result build meaningful products.

When Code Matters, 2006
MALCOLM MCCULBUGH

Scripting is a tool by which the designer can more efficiently express and explore its creativity. Not simply a form finding end. The use of graphical user interfaces allows designers to engage in parametric design or task automation which allow play and manipulation within the parameters of established software without the writing of any real code.

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10 Faces of Inn the anthropologist, 2005
TOM KELLEY

Constrained Generating Procedures, 1998
JOHN HOLLAND

John Holland expands upon the computational mechanisms underlying emergent systems. The system containing emergent characteristics which are the properties of a "model" can be produced. The key feature of the procedures is the "transition function", which is a mapping of the possible states of a system that can arise from this function.
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This paper focuses on what design 'is' and how it is related to. In conclusion, it is proposed that we need to acknowledge, first, the role of design in HCI conduct, and second, the difference between the knowledge-generating Design-oriented Research and the artifact-generating conduct of Research-oriented Design.
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is a branch of mathematics concerned with shape, space, and relative position of figures.

Methodology

Organization
is an entity that has a collective goal and is linked to an external environment.

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All Over Over All

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Buildings and cities are complex networks of space which support activities, movement and interaction. "Space is the machine" shows tools and techniques to understand the abstract interaction network from cities and buildings, and proposes to architects the challenge to design and make architecture based on scientific and meticulous knowledge of a space.

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Notes on the Synthesis of Form, 1964

CHRISTOPHER ALEXANDER

Alexander defines design as "the process of inventing things which display new physical order, organization, form, in response to function," and discusses the process by which a form is adapted to the context of human needs and demands that has called it into being. Such an adaptive process will be successful only if it proceeds piecemeal instead of all at once.

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Universal Methods of Design, 2012
BRUCE HANINGTON

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Design-oriented Human Computer Interaction, 2003
DANIEL FALLMAN

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