

Introducing radiant object theory

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Abstract

The development of peer media might benefit from a treatment of distributed object application spaces. The perspective offered is not a general review of peer media. The abstraction offered is intended to motivate development.

1 Background

In the X.400 [2] paradigm the ITU established a static binary form to communicate well defined messages. In the MIME [1] paradigm then IETF established a textual form to communicate transparently in a message object finitude. In the first case we find the conservation of definition. And in the second case we find the conservation of transparency.

To conserve transparency in the textual case of MIME standards is to contrast and compare fabrication, production, and consumption processes. The obscurity that X.400 products fall prey to is an opacity due

to tooling. The complexity that MIME products are victims of is alternative.

Neither has avoided interference in the affairs of communication. However, fidelity to human ideals of transparency and facility is well served by the IETF simplicity. With textual transparency and technical reproducibility the retreat to obscurity is elided.

These are matters of practice. How establishment evolves to the sustenance of humanity or the exploitation of inhumanity. The ITU paradigm was by far the more perfect establishment, however that establishment has allowed those retreats to obscurity that defeat technical reproducibility.

2 Theory

The matters of theory are spatial and temporal. The spatial logics of digital resources and communication, and the temporal logics of spatial objects and processes. Spatially systemic and universal. Temporally immediate and remote.

When a spatial communication distinction is terrestrial or interplanetary [3], the systemic spatial interest becomes consumption.

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When extreme consumption is not a focus of concern, the textual reproduction standards become interesting. This may be the case of peer media.

3 Structure

The peer media as inclusive of mobile devices is characterized by the contact internetworking of trust relationships. In this conception, the structure of applications is *ad hoc*, and the distribution of objects as compose dictionaries of name spaces is not ordinary but partial. It is the identity of individuals and automata and credentials that are unique by proof.

The *partial object distribution* ($\omega\delta$) over *trust relational connectivity* ($\tau\kappa$)

$$\frac{\omega\delta}{\tau\kappa}$$

represents a class of peer media in the spatio-temporal logic of information and communication. In comparison, the ordinary or *probable object distribution* ($\pi\delta$)

$$\frac{\pi\delta}{\tau\kappa}$$

integrates reachability and distribution as objective.

$$\frac{\omega\delta}{\tau\kappa} \leq \frac{\pi\delta}{\tau\kappa}$$

In probable object distribution ($\pi\delta$), a distributed object of information is replicated (*e.g.* by a factor of three) so that *reachability* ($\rho\delta$) is practical and probable.

$$1 \geq \frac{\rho\delta}{\tau\kappa}$$

In partial object distribution ($\omega\delta$) reachability may be impractical (*i.e.* probability nil).

$$0 \leq \frac{\rho\delta}{\tau\kappa}$$

4 Topology

The social network of trust accept and reject relations benefits from the package model of mechanical interaction. Interaction is performed in isolation from communication as an operational sequence at a package endpoint (peer). The package model raises network reachability from impractical (probability nil) to possible (probability nonzero).

$$0 < \frac{\rho\delta}{\tau\kappa} \leq \frac{\rho\nu}{\tau\kappa}$$

The social trust network with contact routing has reachability ($\rho\nu$). The static node link degree is quantified as

$$N_s = |\tau\kappa|,$$

and the dynamic node link degree is quantified as

$$N_d = |\lambda\kappa|.$$

Therefore topological hop count is represented as

$$\frac{\lambda\nu}{\tau\kappa}.$$

And

$$\frac{\rho\delta}{\tau\kappa} \sim \frac{\lambda\nu}{\tau\kappa}.$$

5 Future work

Parametric topological reachability.

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Radiant object topology

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Abstract

Radiant object theory [2] opened an examination of social peer trust networks. This effort is an examination of the topology of social peer trust networks.

1 Structure

If each node (ν) were to have the same number of trusted contacts ($\tau\kappa$), then

$$N = |\tau\kappa|.$$

This kind of uniformity in speculation affords a combinatoric quantification of topological reachability. Assertive package [3, 1] reachability ($\rho\nu$) represented as

$$\rho\nu = \lambda\nu^{\sigma+\phi}$$

expresses a contact link package broadcast ($\lambda\nu$) restrained by store and forward effects ($\sigma + \phi$).

The conventional, objective demand package reachability is distinct from assertive reachability.

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Radiant object applications

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Abstract

Radiant object theory [7] and topology [8] opened a perspective on social peer trust networks. This effort is an examination of the application of those networks as radiant package [9] systems.

1 Structure

Peer networks serve highly constrained (mobile) devices in a highly constrained spacetime. Space and time are both scarce to peer applications. When the **package that asserts a demand request**

π_D

and the **package that defines a supply response**

π_S

are minimized to the application semantics that have reduced an application domain to an **application domain representation and operation**,

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$\alpha_{\rho+\lambda}$

the spacetime resources have been reasonably conserved.

$$\pi_D^\alpha \longleftrightarrow \pi_S^\alpha$$

Each peer node endpoint that has a copy of π_S^α may be a distributed supply endpoint, according to the evaluation of π_D^α .

$$\pi_S^\alpha \leftarrow \prod \pi_D^\alpha$$

The ephemeral application processing framework determines the boundaries and character of the evaluation of π_D^α .

2 Possible worlds

A relatively implicit context is the world of the web browser. The HTTP [4] request and response message pair are subsumed by an application context, as well as containing streams. A relatively explicit context removes the request and response message pair from contextual dependencies. In this case the domain of origin includes independent demand processing. Original interdependence

should be well defined, well known, and readily reproducible.

When this is true, the evaluation

$$\prod \pi_D^*$$

has a standard meaning as includes the success or failure of an intermediary to supply distributed content.

Standard human interaction technologies have been explored in the W3C [2] and IETF [5]. The span from the necessities of representation to the demands upon representation envelops many worlds, from character codes and portable bitmaps to virtual reality. The communication domain supports the original context as developed in the ITU [6]. A character code may be negotiated or discovered. Likewise a human computer interaction application (HCI/A) framework (HCI/A/F).

The platform is not generic. The peer endpoint device may be mobile or immobile without relevance to the distinction between platform and framework. The conception of HCI/A/F as independent of platform has been blurred by varieties of the conception of platform. Some “platforms” are “frameworks” as available to specification as HCI/A media format. The Scalable Vector Graphics (SVG) [3] is a complete HCI/A/F when it embeds local interaction via JavaScript [1]. And some platforms are functionally equivalent to SVG.

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Radiant object continuity

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Abstract

Radiant object theory [1], topology [3], and applications [2] opened a perspective on social peer trust networks. This effort is a continuation of that examination of radiant object systems.

1 Structure

The partial object distribution ($\omega\delta$) available to social trusted peer ($\tau\kappa$) package networks is incomplete object reachability. The retrieval of any particular package object in the network depends on a physical peer contact and a mechanical peer link ($\lambda\kappa$). Extended reachability is available *via* demand package broadcast subject to link, store, and forward constraints.

$$0 \leq \frac{\omega\delta}{\lambda\kappa}$$

Applications dependent on object ordering include geographic layers. This continuity is a relationship among distributed objects.

Partial object distribution is discontinuous. Applications of peer contact and peer group distribution include social and mesh networks. Social mesh continuity is physical.

$$1 = \frac{\lambda\nu}{\lambda\kappa}$$

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Radiant object security

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Abstract

Radiant object theory [1], topology [4], applications [2], and continuity [3] opened a perspective on social peer trust networks. This effort is a continuation of that examination of radiant object systems.

1 Structure

If communications link privacy is guaranteed by the padded pad

```
oaep b<m>:pk b<n>:k
oaep b<m>:pt b<n>:t
xor b<m>:pm b<m>:pk b<m>:pt
```

the shared secret key material requires private production and sharing. Perhaps a duplex infrared serial port is employed for sharing the secret key material that is part of the guarantee of link privacy.

The inconvenience represented by the maintenance of key material includes the metaphysical work of organizing key material

maintenance and the physical work of performing key material maintenance.

The nano-economics of key material become the nano-economics of link communication in practice. Using these links for package broadcast reaching is expensive in terms of padding.

The nano-economics of padded links illustrates the dynamics of social mesh internet-working. Network bandwidth is *link* scarce.

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Radiant object integrity

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Abstract

Radiant object theory [1], topology [5], applications [2], continuity [3], and security [4] opened a perspective on social peer trust networks. This effort is a continuation of that examination.

1 Character

The integrity of actor or network might be qualified as *intentional* or *extentional*. An intentional causality is a success of integrity. An extentional causality is a failure of integrity. The distinction is inclusive of both physical and metaphysical integrity.

The extentional violation of the metaphysical integrity of an *individual* would be psychological. The extentional violation of the physical integrity of an *actor* would be subterfuge.

A simple and effective comprehension of logical integrity serves the nano-economics of link integrity [4], and thereby the macroscope of network integrity.

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Introducing radiant object vectors

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Abstract

Radiant object theory [1], topology [6], applications [2], continuity [3], security [5], and integrity [4] opened a perspective on social peer trust networks. Radiant object vectors is an evolution of that examination of distributed objects.

1 Structure

A unique producer of distributed objects collects production sets ordered in time. Likewise, application sets may be collected by a method of curation, or automated. Each member of a set is a unique object or vector, by instance or reference, local or remote.

A vector member reference may include metadata. Generally, vector member relations including comparison and order are in member object metadata.

A producer of radiant objects is a member of a social peer trust network [1]. A traditional trust application [2, 4] colors trust as white, distrust as black, and uncertainty as gray. White listed producers are members of

social peer trust networks, and black listed producers are excluded from social peer trust networks.

2 Identity

A vector and object have equivalence of referential identity (κ) and metadata, including the properties and attributes of production and origin ($\sigma + \iota$).

$$\kappa = \sigma + \iota$$

3 Existence

A vector and object have equivalence of referential existence (ϵ). Any vector or object has referential reachability (ρ) as well as a referential indeterminacy (ν). A reference may refer to a set or object that remains to be retrieved, completed, or updated.

$$\epsilon = \rho + \nu$$

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4 Continuity

The membership relation $(\mu\kappa)$ over a vector $(\epsilon\kappa)$ is partial.

$$0 \leq \frac{\mu\kappa}{\epsilon\kappa} \leq 1$$

A vector (subset) is continuous when its membership is contiguous and complete.

5 Consistency

Any relation over a vector $(\phi\kappa)$ is partial.

$$0 \leq \frac{\phi\kappa}{\epsilon\kappa} \leq 1$$

Ideally, the relation (ϕ) and object (κ) are enumerable as are the elements of comparison. An enumerated set is complete. A relational specification set agrees with a relational production set by equivalence of membership to prove consistency by demonstration.

In practice, however, enumeration is partial. Continuity is local. And, consistency is uncertain.

6 Notes

In use, consistency has the metaphysical character of the confidence of good faith. The conservation of metaphysical confidence demands the conservation of consistency as continuity.

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Radiant object vector distribution

John D.H. Pritchard *

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Abstract

Radiant object theory [4, 9, 5, 6, 8, 7] opened a perspective on social peer trust networks. Radiant object vectors [10] is an evolution of that examination of distributed objects. This effort is a review of that work.

1 Structure

Social peer topology is typically exemplified by `git` [13]. Object reference targets are (functionally equivalent to) persistent and immutable content (version) hash symbols (like `git` commit identifiers). Collections are software project directory structures. Distribution is push - pull agnostic.

The radiant object vector is like a collection of `git` projects in that the radiant object is like a software project directory structure [4, 10]. In radiant object theory, distribution is push - pull agnostic. Like `git`, peer topology is distributed. Unlike `git`, radiant object vectors need a fidelity of immediate continuity for the integrity of local order consistency.

Each endpoint is able to determine logical integrity constraints to manage the consumer store when application references are object constrained. When an object is a software project directory structure [2], dependencies are constrained to the object like a self contained HTML or SVG [11, 3]. Self contained objects are endpoint managed [1, 12]. Object vector integrity is regional [10].

The general shape of push - pull agnosticism is that interaction is an endpoint process independent of communication [5].

$$\pi_S^\lambda \leftarrow \sum_{\tau\kappa}^{\rho\nu} \pi_D^\alpha$$

A trusted peer contact may include an interaction, which may yield a distributed broadcast occasion according to store and forward architecture and management.

Unlike `git`, radiant object distribution yields a producer cache store vector that requires local continuity and consistency. As a result, the push - pull distribution event is a synchronization occasion constrained by vector, store, and forward architecture and management. Unlike `git`, rewriting a radiant object produces an independent object.

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