Entrepreneurship 101, OR
What's a nice PhD student like you doing in a course like this?

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Cognitive Systems Brown Bag
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Most of my curriculum development effort these days is spent on:

- **agile software development (EECS 394)**
  - how to develop software using modern sustainable team practices that deliver value as quickly as possible to the client, the team, and the organization

- **software project management (MPD 405 and MSIT 490)**
  - how to define and manage the development of software to achieve maximum value as early and sustainably as possible

- **(agile development for) lean startups (EECS 473 NUvention: web)**
  - how to create viable innovative software ventures
NUvention: Web (EECS 473)

- Two-quarter Kellogg / McCormick course where teams create and launch a viable software-based startup business
- Primary faculty:
  - Mike Marasco (Clinical Full Professor, Director of the Farley Center for Entrepreneurship and Innovation)
  - Todd Warren (advisor to and an investor in Divergent Ventures, former EECS alum and Microsoft product manager)
  - Steve Olechowski (Google Product Manager, former COO of Feedburner)
  - Rich Gordon (Professor Medill; Director of Digital Innovation)
  - Chris Riesbeck
- [http://fcei.northwestern.edu/curriculum/nuvention/web.html](http://fcei.northwestern.edu/curriculum/nuvention/web.html)
Are Such Courses Relevant To Cognitive Systems PhD Students?

No!

- They take time away from doing real research
- They focus on developing the team and the product, not you, the individual
- There's nothing academically interesting about product development or entrepreneurship
Science vs Business

Science

- Goal: facts and models about the real world
- Methods: formal models, empirical studies
- Progress: knowledge accumulation and paradigm shifts

Business

- Goal: profit, growth
- Methods: Trendy buzzword of the month
- Progress: booms and busts

Developing software startups is business, not science
Or is it?
Lean Startups

A business model describes how your company creates, delivers and captures value.

A startup is a temporary organization designed to search for a repeatable and scalable business model.


Lean startup = startup + agile development

http://lean.st/principles/build-measure-learn
Is creating a lean startup science?
There Are Hypotheses

"One of the key tenets of Customer Development is that your business model is nothing more than a set of untested hypotheses."

There Are Metrics

http://startitup.co/guides/294/becoming-a-lean-startup-guru
There are Curricula

http://www.slideshare.net/sblank/lean-launchpad-educators-curriculum/34
There's A Body of Practice

including...

Development

Product
Testing

Agile

PROBLEM
Agile / Lean change not effect desired level of transformation
Very difficult to navigate / mitigate risks on Agile change programs
Matching context to tactics left to judgement of Coach, requires massive experience

SOLUTION
Adapt running lean to IT Agile change
Canvas, stack, meta-iteration cycle, etc
Kanban to verify quantifiability
Behaviour model to validate qualitatively
Kanban to verify quantifiability

UNIQUE VALUE PROPOSITION
Validated Learning Method for Agile IT Organizational Change

UNFAIR ADVANTAGE
Real experience running enterprise scale IT agile/lean transformations
Real experience applying Agile, Kanban, Lean Startup in corporate settings

CUSTOMER SEGMENTS
Agile Coaches and Change Agents
users: change recipients undergoing change led by change agents

EXISTING ALTERNATIVES
Existing Agile change methods (Scrum, Open IP)
Guidance from change / transformation experts (eg Kotter)
Kanban

KEY METRICS
Number of coaches mention using the method
Number of IT departments who mention using the method

HIGH-LEVEL CONCEPT
Lean Change = Lean Startup for Agile IT Transformation

CHANNELS
Online (blog, wiki, etc)
Agile community (conferences and online)

COST STRUCTURE
Package/Publish
Develop base method
Refine on real transformation

REVENUE STREAMS
Community Mindshare (sell ??? books)
Consulting work
There's NSF Funding!

There Are Theories

- Effectuation: a logic for entrepreneurial planning
- Instead of: find best means to achieve a specified goal
- Experiment with what can be achieved given current abilities
- Effectuation heuristics:
  - Bird-in-hand,
  - Affordable loss
  - Make lemonade
  - Partners not competitors

Saras D. Sarasvathy *Effectuation: Elements of Entrepreneurial Expertise*

Saras D. Sarasvathy *Entrepreneurship as a Science of the Artificial*
Returning to the original question...
Are Such Courses Relevant To Cognitive Systems PhD Students?

Maybe. Perhaps we need a new model for what a PhD student does.
Business funding model, i.e., what will sustain the deployment and development of your idea?