

1. Intentionally enter diffuse mode over ideas
 - a. background processing
 - i. give yourself a challenge, then go for a walk or take a shower
 - ii. review problem before bed
 - iii. work on problem first thing in the morning
 - b. Diffuse mode thinking, internal and external
 - c. Focus on the topic during meditation
 - d. Meditation, sit in silence with the target as an object. Let ideas come, without trying. Less stressful idea listing.
2. Idea Lists
 - a. Listing approaches to a body of problems (say ML toolbox, or models in how to think)
 - b. Write a long list, and prune / pare it down
 - c. Generate many ideas, and use the ones that are less frequently used ('creative' ones).
3. Transfer / Abstract over similar solutions
 - a. Generalization - if you've solved a problem, extend the solution to its farthest reaches
 - b. Metaphor Generation
 - c. Creating idea map- figure out how ideas can go in the same canvas
 - d. Connecting abstract concepts map! How to merge ideas! System that generate ideas from different field and force you to combine them
 - e. Find a source idea, categorize it, generalize.
 - i. Systematization of everything
 - ii. Emoting creativity
 - f. List solutions to a problem and generalize
 - g. Model vs. Technique - see what works in the space, ask why to get a model. Generalize from the model to generate more techniques.
 - h. Think about similar areas that might be applicable and make analogies
4. Composition / Recombination
 - a. Permutation / remixing
 - b. Combining, connecting ideas / Idea Sex
5. Parameterize a space and search the spaces where objects don't yet exist
 - a. Multinomial Trees (Ed Boyden)
6. Randomness
 - a. Randomize. Generate random ideas by specifying some parameters, and make them work / use them as prompts.
 - b. Randomized category pairings
7. Graphs of relationship between ideas (Ex., Optimizer / Model / Loss Function)
 - a. Optimizing supervised learning with reinforcement learning (architecture search)
 - b. Optimizing reinforcement learning with supervised learning (Policy Network / Value Network)
8. Prompts

- a. Leading questions
 - i. Resource constraints (time, attention, money, assumptions, etc.)
 - ii. Resource excess (time, attention, money, etc.)
 - iii. Eliminating options
 - iv. Imagine the future (problem is solved, for ex.). What happened? Work backwards.
 - b. question prompts
 - i. "so what" questions
 - ii. "what if" questions
 - iii. "how might we" questions
 - iv. "what if the opposite is true"
 - v. "does it even matter"
 - vi. "What if I need to solve it once and for all"
 - vii. "What if I need to solve it for everyone"
 - viii. "What would X do"
 - ix. books, collections of questions
 - c. What is the meta level idea?
 - d. What questions do I have about this?
 - e. Imagine what other people would think of
9. Constraints
- a. playing with constraints
 - i. Widen constraints
 - ii. Narrow constraints
 - 1. Eg What if I needed to solve this once and for all within one hour
 - b. What are the upstream constraints in the system?
 - c. What is the meaning of the obstacles to search?
 - d. What is the meaning of the obstacles to prioritization?
 - e. Define boundaries of solution spaces better
 - i. Find upstream constraints
 - f. Create and remove constraints (time, resource, etc)
 - g. Time Constraint
10. Brainstorm [thought dumping]
11. Reframe
- a. List and reject assumptions
 - b. Current Knowledge frames ideas. Break out of frame with:
 - i. Looking at problem from perspective of another person, another category of thinker
 - c. Apply different modes of processing
 - i. What would a supervillian do? (Prompt framing) / Supervillian mode
 - ii. Emotional
 - 1. Anger
 - 2. Gratefulness
 - 3. Adoration

- 4. Frustration
 - 5. Excitement
 - iii. Types of Thinker
 - 1. Mathematician
 - 2. Technologist
 - 3. Computer Scientist
 - 4. Philosopher
 - 5. Psychologist
 - 6. Economist
 - iv. find inspiration in other areas:
 - 1. math
 - 2. mythology
 - 3. writings about principles
 - 4. Physics
 - 5. Etc
 - v. Environmental
 - 1. Work in a cluttered environment
 - vi. Game Lenses, list of generic lenses
 - vii. Asking what would Hufflepuff / Gryffindor / me would do
 - viii. Asking what a friend would do
 - ix. Predicting what someone will say and then asking them
 - d. Articulate moves that help me break frame
 - e. Replacing words with nonsensical stand-ins
 - f. Assumption listing
 - g. Anti-indoctrination - assume that important things you believe about a domain are false. Note what falls and why.

12. Multiple levels of analysis

- a. Multiple levels of abstraction
- b. Meta-object two space
 - i. Simultaneously optimizing the object and the meta level
- c. Multiple frames - think at lower or higher levels of analysis

13. Defend a difficult position, adversarial conversation

14. Think ground up, from first principles

15. Deconstruction (Mapping out the space)

- a. Mutually Exclusive, Collectively Exhaustive
- b. Deconstruction + Optimization
- c. Actually do science 'to split'

16. Design Thinking

17. Social Solutions

- a. Crowdsourcing ideas
- b. look up what other people have been saying about it
 - i. discuss things with others
 - ii. check social media

- iii. find differing discussions online
- iv. Mapping ideas generation for other people!
- c. Work with other dissimilar people

18. Automation

- a. Inspirational bot
- b. Continuous conversation with a bot
- c. Related question generating bot
- d. Tracking brain activity for ideas and figure out what sensor make ideas
- e. Generate RL model to increase reward for ideas!
- f. Geometry of ideas! Figure out the patterns of ideas!
- g. Idea bot that tells how much your idea novel
- h. A response bot that listen to your ideas - tell you what to need to make them happen, how many other people have been thinking about it before!
- i. A mental bookshelf for your idea that links your ideas!
- j. A.I. that generate problems and you should come up with new solutions
- k. Stimulating environment that help you generate ideas - through VR
- l. Language of ideas! Create the math for idea-generation - formulate the idea generation
- m. Search Engines
 - i. Build automated tools that do lookups over large data (books, websites) for a given query
 - ii. Optimized for different parameters
 - iii. Different categories of search
 - 1. Searching email

19. Thought Habits / Mental

- a. Weekly and daily loading programs
- b. Brainstorm often
- c. Create and refine a distinct open mode
- d. Create imminent desire for coming up with relevant ideas
- e. System 1 + Generalization
 - i. Take an intuitive response and understand its mechanism. Turn the mechanism into a generator.

20. Invert

- a. Imagine ways of not doing it, or preventing the goal from being reached: adversarial

21. Meta

- a. Why come up with ideas? Figure out the patterns of idea generation - create the meta-level system for idea creation
- b. Separate generation and pruning (open vs closed)
- c. Read books about how other people do effective creativity to gem mine their methods
- d. Checklists of things to try

- e. Implicit prioritization (push techniques actually used to the top, those that you de-facto prioritize), improve query list over time
- f.

22. Write about it!

23. Activities

- a. Drawing
- b. Dance
- c. Giving a speech to the air
- d. Improving a son
- e. Page through pinterest boards to get new inspiration
- f. Thinkpak
- g. Improv Games