

SELF STUDY

BASED ON MY OWN UNDERSTANDING OF THE SUBJECT

Topological Data Analysis

An in-depth analysis

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Summary

“A goal without a plan is just a wish.”
– Antoine de Saint-Exupéry

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1.1 Goals to Achieve

1. Quit Smoking for Arafat
2. 10 Patents and one Math paper
3. Finish Book with Eric Mueller
4. Build the base for future AI (TDA and Neurosymbolic AI)
5. Guitar practice
6. Flute practice
7. Review All Math Courses and Get 100% prepared to Read Perelman's Paper
8. Learn fluent Hindi
9. Fifteen end to end professional projects (Big data + AI) with complete documentation and upload it in GitHub
10. Sleep everyday 8hours
11. Financial Target 300k USD.
12. Resurrect the network from all sources.
13. Everyday Physical Exercise

14. Two trips inside USA
15. Complete Knowledge of Real Estate
16. Two times whole body checkup
17. Brush two times a day
18. Make a very strict expenditure plan
19. Clean the house once a month
20. Finish 100% of a latest AI/Machine learning book (including exercise)
21. Regular Shower and Cleaning whole body after waking up everyday

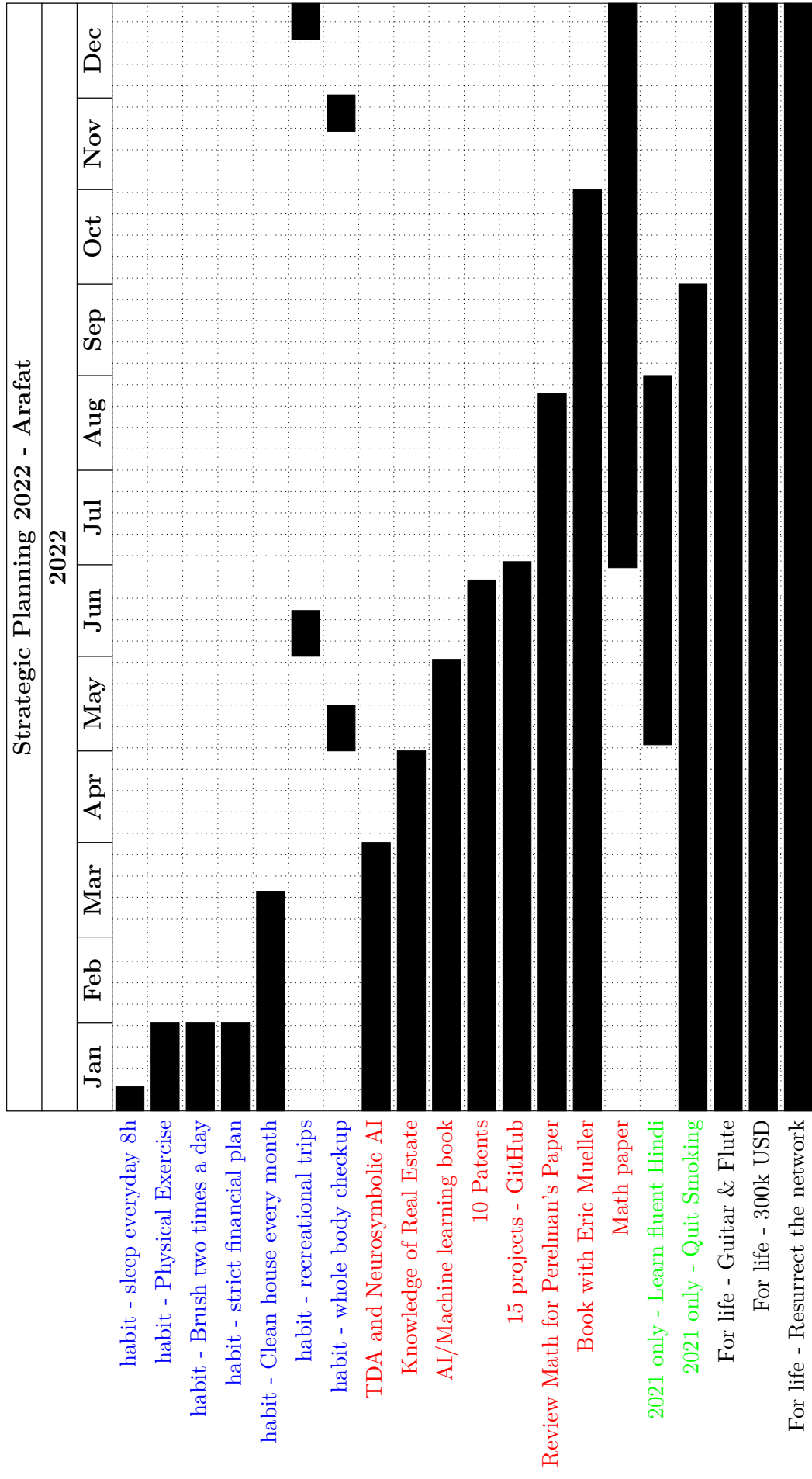
1.2 Mistakes 2021

1. Didn't take care of health, personal hygiene, mental condition at all.
2. Never took care of house, there are bugs, cockroaches and fungus everywhere.
3. Didn't have any yearly plan and year went in an unplanned way even though luckily it was not that bad.

1.3 Targeted Investment Plan

1. Gas Station / Franchise
2. Real Estate / Rental Property
3. Technology Startup Company

1.4 Quarterly Plan



Quarter 1

“I believe that at the end of the century the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted.”
– Alan Turing

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2.1 TDA, AI, ML and Neurosymbolic AI

1. CS221: Artificial Intelligence: Principles and Techniques - [Course outline](#), [videos](#).
2. [CS224N: Natural Language Processing with Deep Learning | Winter 2021](#)
3. [Perspectives in AI Seminar](#)
4. [AMMI Geometric Deep Learning Course \(2021\)](#)
5. [Control, Machine Learning and Numerics](#)

6. [Video lectures - Topological Data Analysis - Jose Perera](#)

2.2 Real Estate

2.2.1 Flip House

2.2.2 Land Development

2.2.3 Build House

2.3 Projects

2.4 Patents

2.5 Mathematics

2.6 Mathematics Paper

Quarter 2

Quarter 3

Quarter 4

Real Estate Research

“Landlords grow rich in their sleep.”

– John Stuart Mill

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A.1 Introduction

A.1.1 What is real estate?

Real estate is any piece of land with or without a manmade structure, including anything from farmland to an apartment complex. Real estate includes anything permanently associated with a piece of land, such as roads or utilities. This also consists of the various rights that come with a piece of land (including water or mineral rights). The definition of

real estate is likely broader than what you had in mind, but it is important to understand how each of these components plays a role in the value of real estate.

A.1.2 Who is a real estate agent?

A real estate agent is someone who has a professional license to help people buy, sell, or rent all sorts of housing and real estate.

A.1.3 Who is a real estate broker ?

A real estate broker is someone who has taken education beyond the agent level as required by state laws and passed a broker's license exam.

Similar to real estate agent exams, each state sets its own broker education and exam requirements. The extra coursework covers topics such as ethics, contracts, taxes, and insurance—at a more in-depth level than what's taught in a real estate agent prelicensing course.

Prospective brokers also learn about real estate legal issues and how the law applies to operating a brokerage, real estate investments, construction, and property management.

Agents are only licensed to work directly with clients as they assist in the purchase and sale of real estate. By comparison, brokers can do everything an agent does, but they can also manage agents, prepare contracts, and operate their own real estate brokerage.

In other words, all licensed brokers can act as real estate agents, but not all agents are brokers.

A.1.4 Who is a realtor?

¹. In order to become a Realtor—a licensed agent with the ability to use that widely respected title—an agent needs to be a member of the National Association of Realtors®¹. The dues an agent pays to be a member of NAR include the following benefits:

- Access to information webinars
- Code of ethics training
- A subscription to Realtor Magazine
- Market research and technology reports
- Historical data requests
- Library and research services
- Discounts on certification courses, conference attendance, mobile phones, car rentals, dental and health insurance, and books/brochures.

¹National Association of Realtors. "Quick Real Estate Statistics." Accessed Feb. 11, 2021.

A.2 How to become a real estate agent?

A.2.1 Step 1: Research Your State's Requirements

Estimated Cost: Free

There's no such thing as a national real estate license, so you must meet your state's unique licensing requirements. A good place to start your research is your state's real estate regulatory office website, which you can find through an online search for “[*your state*] real estate regulatory office” or by visiting the Association of Real Estate License Law Officials (ARELLO)'s [regulatory agency directory](#).

Each state typically has specific requirements for:

- Age
- Education requirements (such as a high school diploma or GED)
- Prelicensing courses and post-licensing requirements
- Exams and exam eligibility
- Application process and fees
- Background checks and fingerprinting
- Continuing education
- How to achieve the next level of licensing
- Reporting criminal history

Some states have reciprocal licensing agreements with other states, which means you can get your license in one state and use it in another without having to take an additional license examination.

New York, for example, has reciprocity with nine states (some states have reciprocity for brokers only): Arkansas, Colorado, Connecticut, Georgia, Massachusetts, Mississippi, Oklahoma, Pennsylvania, and West Virginia. As with regular licensing requirements, each state has its own process for obtaining a license through reciprocity.

A.2.2 Step 2: Take a Prelicensing Course

Estimated Cost: \$350+

No matter where you live, you have to take a pre-licensing course from an accredited real estate licensing school before you sit for the real estate license exam. The required number of hours varies by state. In California, for example, applicants must take three real estate classes totaling 135 hours. In New York and Georgia, the courses take 75 hours; in Florida, the course takes only 63 hours. And in Texas, you need 180 hours of coursework.

Most states offer several ways to fulfill the prelicensing course requirements, including online classes, brick-and-mortar real estate schools, and classes at community colleges.

You may be able to save money (and time) by enrolling in one type of class program over another, so it pays to shop around.

The 6 Best Online Real Estate Schools of 2021

- Best Overall: [Real Estate Express](#)
- Best Interactive Courses: [Kaplan](#)
- Best Value: [360 Training](#)
- Best for Test Prep: [Mbition](#)
- Best for Continuing Education: [The CE Shop](#)
- Best for Niche Practices: [Center for Realtor Development](#)

Choose the method that works best for your learning style and schedule. Also, do your research and be selective when it comes to picking a program. The quality of the instructors and materials will influence how well prepared you are to take the exam.

A.2.3 Step 3: Take the Licensing Exam

Estimated Cost: \$100 - \$300

Your instructor should explain how to schedule, register, and pay for the licensing exam (if not, visit your state's real estate commission website). Exams are computerized and consist of two parts: a national portion on general real estate principles and practices, and a state-specific section that covers your state's real estate laws. The exams are multiple-choice format, and the number of questions and time allotted for the exam vary by state.

Each section is scored separately, and you must receive a passing grade on both sections to pass. If you fail one or both sections, you'll have the opportunity to retake the exam. Each state has its own rules regarding the number of times you may retake an exam, how long you must wait between exams, and the deadline for completing any retakes.

A.2.4 Step 4: Activate Real Estate Agent License

Estimated Cost: \$200 – \$400

When you pass the exam, it's time to submit an application and any required documents and fees to your state's real estate regulatory organization.

When your application is approved, the state will mail your real estate license certificate, and your name will be searchable under the licensees' section of its website. Keep in mind that you're not allowed to work as a real estate agent before your license is issued by the state's real estate authority—so hold off until you have that license in your hand.

A.2.5 Step 5: Consider Becoming a Realtor

Estimated Cost: \$185

Many people use the terms real estate agent and Realtor interchangeably, but they actually differ.

Though both are licensed to help buyers and sellers throughout the real estate transaction process, Realtors are members of the National Association of Realtors (NAR) and subscribe to its strict Code of Ethics.

The National Association of Realtors is the largest trade association in the U.S., representing 1.3 million members who are salespeople, brokers, property managers, appraisers, counselors, and other participants in the residential and commercial real estate industries.

Though membership is optional, being a Realtor can add to your credibility as a real estate agent. As a Realtor, you'll also have access to a variety of benefits, including:

- Business tools
- Real estate market data, research, and statistics
- Educational opportunities
- Discount programs geared toward helping you succeed in business

For example, Realtors have access to Realtors Property Resource (RPR), the largest online real estate database in the U.S., built from public record and assessment information. It includes information on zoning, permits, mortgage and lien data, schools, and a large database of foreclosures.

A.2.6 Step 6: Join a Real Estate Brokerage

Estimated Cost: \$25 – \$500+ Per Month

As a real estate agent, you work under the umbrella of a supervising broker who is licensed by the state to oversee real estate transactions and make sure you (and the other real estate agents) follow the required legal and ethical standards. In general, you won't earn an hourly salary. Instead, the brokerage will likely pay you a percentage of the commissions it collects from your real estate transactions.

Depending on the arrangement you have with your brokerage, you may have to pay for desk fees, tech fees (e.g., for your website), business cards, marketing materials, and other normal costs of doing business. You'll also have other one-time and ongoing expenses, such as renewing your license each year, continuing education, lockbox fees, and Multiple Listing Service memberships.

A.3 Preparing for Qualifying Education

A sales agent is a person who is licensed by the Real Estate Commission to act as an agent on behalf of a real estate broker and their clients. A sales agent must be sponsored by a licensed Broker in order to perform any act of real estate services [1]. The very first

step is to find a [qualifying education provider](#). You have to finish 180 classroom hours of the following qualifying real estate courses:

1. Principles of Real Estate I (30 classroom hours)
2. Principles of Real Estate II (30 classroom hours)
3. Law of Agency (30 classroom hours)
4. Law of Contracts (30 classroom hours)
5. Promulgated Contract Forms (30 classroom hours)
6. Real Estate Finance (30 classroom hours)

A.3.0.1 Principles of Real Estate I (30 classroom hours)

A.3.0.2 Principles of Real Estate II (30 classroom hours)

A.3.0.3 Law of Agency (30 classroom hours)

A.3.0.4 Law of Contracts (30 classroom hours)

Textbook:

[Texas Law of Contracts](#), Second Edition Update.

Unit 1: Texas Contract Law

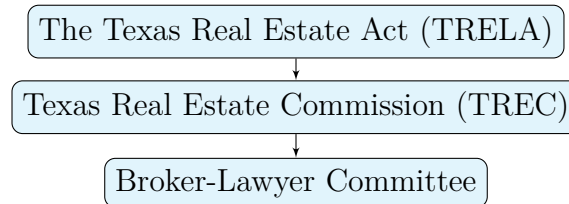


Figure A.1: Texas Real Estate - Organogram

The Purpose of TRELA

The state legislature of Texas passed the Texas Real Estate License Act to protect the public from brokers and sales agents who are dishonest. TRELA also:

- Establishes rules that license holders must follow that pertain to obtaining, and later maintaining, a real estate license
- Lists the penalties for violations of the License Act
- Protects brokers from unfair activities by their competition

The more a license holder, whether a sales agent or broker, understands about TRELA, the less they have to worry about when it comes to keeping their license active.

The History of TRELA

In 1939, the Texas Legislature passed the Real Estate Dealers License Act to govern the licensing and practice of real estate in Texas. It eventually took on the name Texas Real Estate License Act.

Today, the Texas Real Estate License Act is part of Chapters 1101 of the Texas Occupations Code, and regulates real estate brokers and salespersons. In case you're curious, Chapter 1102 pertains to real estate inspectors.

TRELA and TREC

The Texas Real Estate License Act is the legislation that governs the licensing of Texas real estate license holders. The Texas Real Estate Commission (TREC), on the other hand, enforces the provisions of TRELA. The Texas legislature created TREC in 1949 (10 years after the creation of TRELA) for that purpose.

Think of it this way: TRELA is the law, and TREC is the enforcer of that law. TRELA and TREC go hand in hand!

Texas Real Estate Broker-Lawyer Committee

The Texas Real Estate Broker-Lawyer Committee drafts and revises all contracts promulgated by TREC. It consists of six members appointed by the Commission, six members appointed by the State Bar of Texas, and one public member appointed by the Governor's Office

Texas Occupations Code - OCC § 1101.654. Suspension or Revocation of License or Certificate for Unauthorized Practice of Law

- (a) The commission shall suspend or revoke the license or certificate of registration of a license or certificate holder who is not a licensed attorney in this state and who, for consideration, a reward, or a pecuniary benefit, present or anticipated, direct or indirect, or in connection with the person's employment, agency, or fiduciary relationship as a license or certificate holder:
 - (1) drafts an instrument, other than a form described by Section 1101.155, that transfers or otherwise affects an interest in real property; or
 - (2) advises a person regarding the validity or legal sufficiency of an instrument or the validity of title to real property.
- (b) Notwithstanding any other law, a license or certificate holder who completes a contract form for the sale, exchange, option, or lease of an interest in real property incidental to acting as a broker is not engaged in the unauthorized or illegal practice of law in this state if the form was:
 - (1) adopted by the commission for the type of transaction for which the form is used;
 - (2) prepared by an attorney licensed in this state and approved by the attorney for the type of transaction for which the form is used; or

- (3) prepared by the property owner or by an attorney and required by the property owner.

A.3.0.5 Promulgated Contract Forms (30 classroom hours)

A.3.0.6 Real Estate Finance (30 classroom hours)

Most Amazing Moments

Most Disturbing Moments

Bibliography

- [1] TREC. *Texas Real Estate Commission*. URL: <https://www.trec.texas.gov/> (page - 13).