



OlympianPT

Adaptive Physical Therapy
NPTE Board-Exam Excellence and Mastery in Practice!

- ✓ *Excel in strengths*
- ✓ *Overcome weaknesses*
- ✓ *Reach the Olympian-PT Podium*





OlympianPT

💡 Inspiration 💡

I am a lifelong athlete who went through many injuries and rehab. I saw full clinics, long wait lists, and new practitioners who needed targeted mastery for complex cases.

More people are exercising resulting in more injuries. Our population is aging and PT needs are rising. Demand is growing faster than supply. Burnout is real. Complex recovery requires mastery and deep knowledge from day one.

My **vision of exceptional recovery in every clinic**, drove my **mission**:

to motivate PT candidates with the Olympian mindset and provide personalized, data-driven practice, so they achieve their peak potential and help people heal fast.

OlynpianPT was built to fulfill this mission.



Inspired by Olympic athletes' speedy recoveries and relentless spirit to rise after each fall, and seeing their "thank-you" photos in the PT clinics, we designed **OlympianPT** to create expertise from day one on the job

OlympianPT motivates PT candidates to persevere and achieve their peak performance so patients can heal fast, move, and enjoy life to the fullest!

This 🏆 is our mission!



Problem

- Prep static finite random question banks quickly become outdated
- No personalized remediation or adaptive support
- Schools lack actionable data to support entire cohorts
- Prep providers face high student churn and costly content updates
- Demand for physical therapists outpaces supply
- Competition for top clinical talent is rising
- Passing NPTE does not guarantee success on the first job!

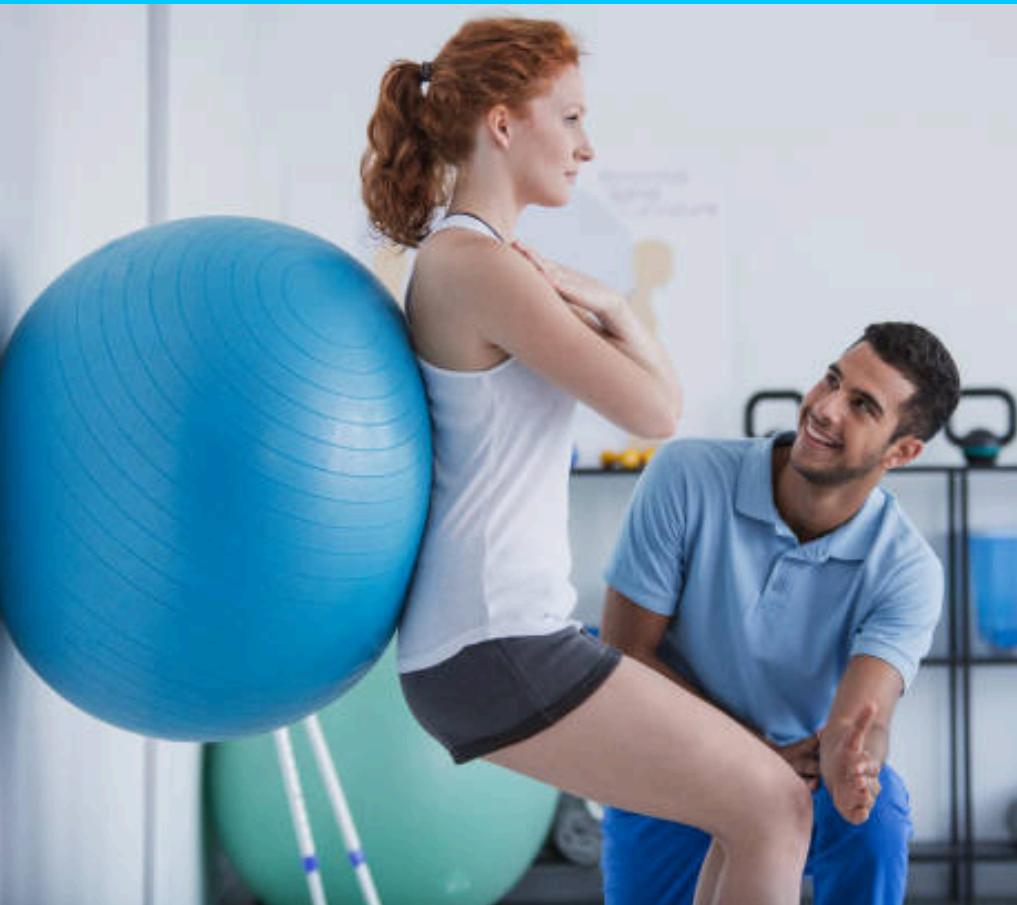
Our Solution

Your Competitive Advantage !

OlympianPT

- ✓ **AI-powered Adaptive** on-demand learning app
- ✓ Empowering PT candidates to master their boards
- ✓ **Today:** Personalized dynamic practice, tailored to each student's unique needs, with constructive feedback
- ✓ **Next:** Learner, faculty and cohort **analytics** with exportable summaries to support program reporting
- ✓ Launchpad from exam prep to clinical mastery
- ✓ Inspiration → Aspiration → Motivation → Action!

Key Features



MVP

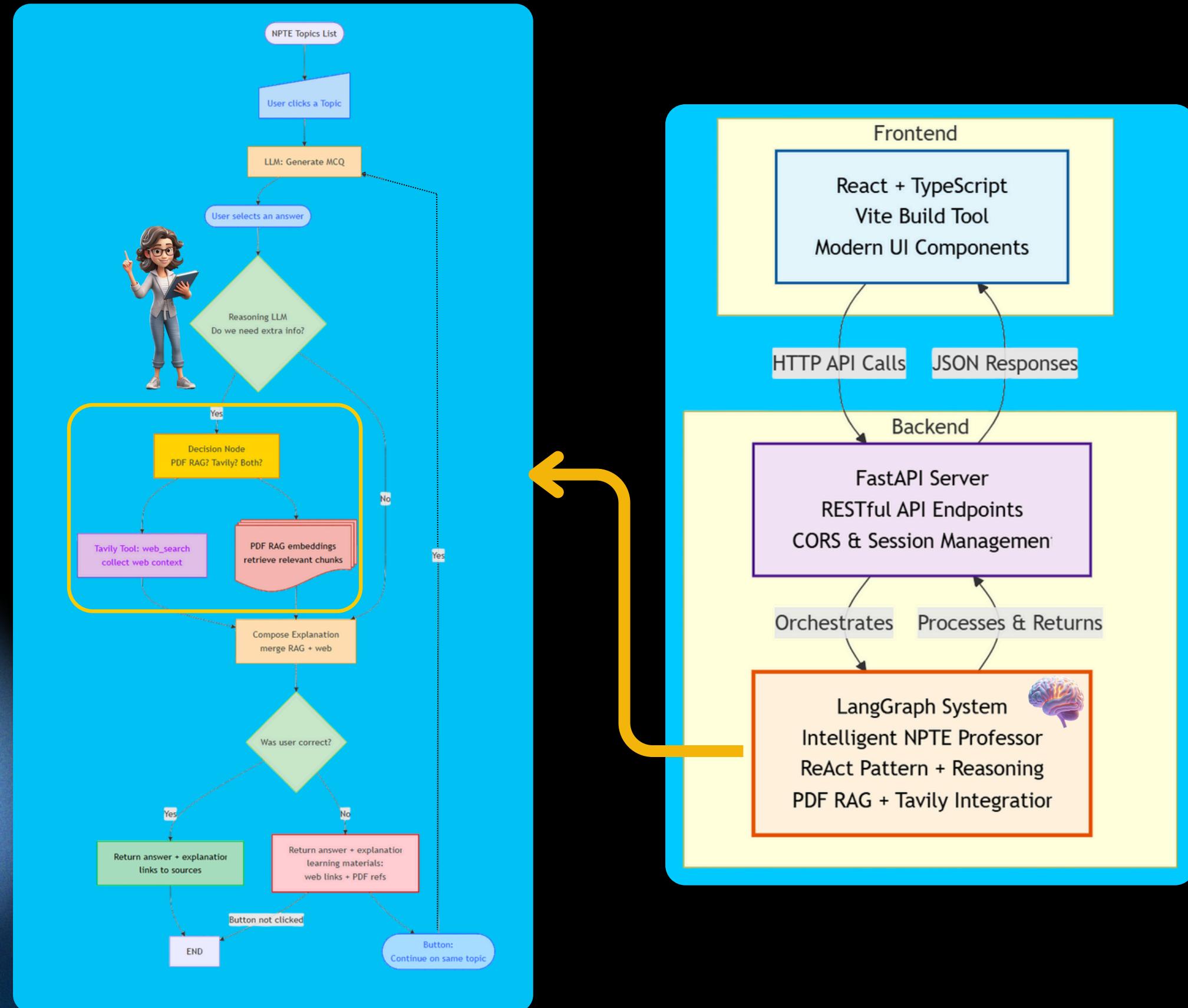
- **Personalized on-demand** practice questions continuously expanding upon request, and clear explanations with links to trusted, open learning resources.

Coming next:

- **Diagnostics** to map strengths and weaknesses.
- **Adaptive system** tracks progress and optimizes study paths in real time.
- **Analytics dashboard** empowers schools and providers with actionable insights.



Architecture



System Architecture

Frontend (React + Vite)

- **React App:** Modern UI with real-time state management
- **Vite Build Tool:** Very fast development and optimized production builds, hot reloading
- **Responsive Design:** Clean interface for topic selection and Multiple-choice QA (MCQ) interaction
- **Scalable:** Deploy for production

Backend

- **FastAPI Server:** RESTful API endpoints for MCQ generation and evaluation
- **LangGraph Agent:** Intelligent NPTE Professor using ReAct pattern
- **PDF RAG System:** Qdrant vector database with 8,132 chunks from 72+ PDFs
- **Tavily Integration:** Web search for current PT information and learning materials
- **Together.ai LLM:** Meta-Llama-3.1-8B-Instruct-Turbo for intelligent reasoning



Correct Choice

NPTE-Practice-Learn-Excel!

Please select one of the 9 NPTE topics

Select a topic... Generate Question

A 35-year-old male presents to the clinic with a complaint of lateral knee pain after a soccer game. He reports that his pain is worse when he performs a single-leg squat with his right leg. On examination, the Lachman test is negative, but the varus stress test is positive. Which of the following structures is most likely injured?

A. Medial collateral ligament
B. Anterior cruciate ligament
C. Posterior cruciate ligament
D. Lateral collateral ligament

ANSWER ANALYSIS:

D. Lateral collateral ligament CORRECT ANSWER

Explanation for each choice:

A. Medial collateral ligament INCORRECT: The medial collateral ligament (MCL) is not typically injured in a varus stress test, as the MCL is more commonly injured in valgus stress tests. This is because the MCL is a major stabilizer of the knee and is more commonly injured when the knee is subjected to a valgus force, which is a force that pushes the knee inward.

B. Anterior cruciate ligament INCORRECT: The anterior cruciate ligament (ACL) is not typically injured in a varus stress test, as the ACL is more commonly injured in non-contact pivoting injuries or when landing from a jump. The ACL is a major stabilizer of the knee and is more commonly injured when the knee is subjected to a sudden, forceful twisting motion.

C. Posterior cruciate ligament INCORRECT: The posterior cruciate ligament (PCL) is the most likely structure to be injured in a varus stress test, as the PCL is a major stabilizer of the knee and is more commonly injured in varus stress tests. However, in this case, the varus stress test is positive, but the Lachman test is negative, which suggests that the PCL is not the most likely structure to be injured.

D. Lateral collateral ligament CORRECT: The lateral collateral ligament (LCL) is the most likely structure to be injured in this case, as the varus stress test is positive and the Lachman test is negative. The LCL is a major stabilizer of the lateral aspect of the knee and is more commonly injured in varus stress tests.

Key Learning Points for Musculoskeletal system:

1. Understanding the anatomy of the knee: The knee is a complex joint that is stabilized by multiple ligaments, including the MCL, LCL, ACL, and PCL. Understanding the anatomy of the knee is essential for diagnosing and treating knee injuries.
2. Recognizing the signs and symptoms of knee injuries: Knee injuries can present with a variety of signs and symptoms, including pain, swelling, and instability. Recognizing the signs and symptoms of knee injuries is essential for making an accurate diagnosis and developing an effective treatment plan.
3. Using clinical tests to diagnose knee injuries: Clinical tests, such as the varus stress test and the Lachman test, can be used to diagnose knee injuries. Understanding how to perform and interpret these tests is essential for making an accurate diagnosis and developing an effective treatment plan.

Common mistakes to avoid:

- Failing to consider the anatomy of the knee when diagnosing and treating knee injuries.
- Failing to recognize the signs and symptoms of knee injuries.
- Failing to use clinical tests to diagnose knee injuries.
- Misinterpreting the results of clinical tests, such as the varus stress test and the Lachman test.

Learning Materials:

- <https://pmc.ncbi.nlm.nih.gov/articles/PMC4970849/>
- https://www.physio-pedia.com/Lateral_Collateral_Ligament_Inj...
- <https://www.choosept.com/guide/physical-therapy-guide-latera...>

User Interface

Incorrect Choice

NPTE standard Topics

NPTE-Practice-Learn-Excel!

Please select one of the 9 NPTE topics

Select a topic... Generate Question

Cardiovascular and pulmonary systems
Musculoskeletal system
Neuromuscular and nervous systems
Integumentary system
Metabolic and endocrine systems
Gastrointestinal system
Genitourinary system
Lymphatic system
System interactions

NPTE-Practice-Learn-Excel!

Please select one of the 9 NPTE topics

Neuromuscular and nervous systems In Progress...

NPTE-Practice-Learn-Excel!

Please select one of the 9 NPTE topics

Select a topic... Generate Question

A 55-year-old patient with a history of chronic obstructive pulmonary disease (COPD) presents with shortness of breath and a pulse oximetry reading of 88% on room air. The patient's medical history includes a recent hospitalization for a pulmonary embolism. The patient's medical regimen includes a diuretic and a beta-2 agonist. Which of the following is the most appropriate action for the physical therapist to take?

A. Order a chest X-ray to confirm the presence of a pulmonary embolism
B. Administer oxygen therapy to increase the patient's oxygen saturation
C. Modify the patient's exercise program to include only low-intensity activities
D. Educate the patient on the proper use of a peak flow meter

ANSWER ANALYSIS:

D. Educate the patient on the proper use of a peak flow meter CORRECT ANSWER

Explanation for each choice:

A. Order a chest X-ray to confirm the presence of a pulmonary embolism INCORRECT: Ordering a chest X-ray is not necessary as the patient has already been diagnosed with a pulmonary embolism during a recent hospitalization. This action would be redundant and unnecessary, and would not address the patient's current needs.

B. Administer oxygen therapy to increase the patient's oxygen saturation INCORRECT: Administering oxygen therapy may be beneficial in acute settings, but it is not the most appropriate action in this scenario. The patient's oxygen saturation is only slightly decreased (88% on room air), and the primary concern is managing the patient's chronic condition. Administering oxygen therapy without a clear indication or without addressing the underlying cause of the decreased oxygen saturation may not be effective and could potentially lead to over-reliance on oxygen therapy.

C. Modify the patient's exercise program to include only low-intensity activities INCORRECT: Modifying the patient's exercise program to include only low-intensity activities is not necessary. The patient's condition can be managed with proper exercise and lifestyle modifications. In fact, regular exercise is often recommended for patients with COPD to improve lung function and overall health.

D. Educate the patient on the proper use of a peak flow meter CORRECT: Educating the patient on the proper use of a peak flow meter is the most appropriate action. This will help the patient monitor their lung function and make necessary adjustments to their treatment plan. Peak flow meters are a valuable tool for patients with COPD, allowing them to track their lung function and identify any changes or exacerbations.

Key Learning Points for Cardiovascular and pulmonary systems:

1. Monitoring and Management of COPD: Patients with COPD require regular monitoring and management of their condition, including the use of peak flow meters to track lung function and make necessary adjustments to their treatment plan.
2. Exercise and Lifestyle Modifications: Regular exercise and lifestyle modifications are essential for patients with COPD to improve lung function and overall health.
3. Avoid Over-Reliance on Oxygen Therapy: Patients with COPD should not rely solely on oxygen therapy to manage their condition. Instead, they should work with their healthcare team to develop a comprehensive treatment plan that includes exercise, lifestyle modifications, and medication management.

Common mistakes to avoid:

- Over-relying on oxygen therapy without addressing the underlying cause of decreased oxygen saturation
- Modifying exercise programs to include only low-intensity activities without considering the patient's individual needs and goals
- Failing to educate patients on the proper use of peak flow meters and other monitoring tools.

Learning Materials:

- <https://empendium.com/mcmtextbook/chapter/B31.IV.24.65>
- https://www.physio-pedia.com/Oxygen_Therapy
- <https://www.ncbi.nlm.nih.gov/books/NBK459325/>
- <https://www.hopkinsmedicine.org/health/treatment-tests-and-t...>

Try Another Question (Same Topic)

Market Opportunity & Strategy

Opportunities

- ~20,000 PT students graduate per year in the U.S
→ who need to excel on day one.
- ~4000 NPTE first-time failures in 2025, needed in the clinics **now**.
- ~294 accredited **DPT** programs need insights for improvement
- Passing the exam does not guarantee excellence in practice
- App Expansion: **OT** (~9k grads/yr), **CPA** (~72k), **Bar** (~35k), and **Continuing Ed** for professionals

Strategy

Provides Value to:

- **Universities**: personalize prep now; planned faculty insights and exports
- **Prep providers**: differentiated adaptive offering; reduced content upkeep
- **Individuals**: on-demand, mobile learning with clear explanations and learning material
- **Go-to-market**: pilots with schools and select prep partners, then we scale!

Road Map & Business Model

Y1 🏁 Rev: \$0.5M

- Pilot with select regional University partners
Model: Annual Institutional licensing (per-student)
Prep providers: per-seat or revenue share. Tot. Rev: \$0.5M

Y2 🌎 Rev: \$1.5M

- Expand to national Universities and key prep providers

Y3 🚀 Rev: \$4M, initial B2C

- Add adjacent boards (OT)

Y4 ✨ Rev: \$8M

- individual memberships with optional light freemium
- or paid full prep and analytics.

Y5 🌟 Rev: \$15M+

- Full national scale across disciplines

Meet our Team

Olympia Lilly Bakalis, Founder
Ph.D. Physics, AI-ML Engineer, AI-Software Developer, Thinker

Bogdan Turturica, Financial Advisor
Chairman of Governing Board (interim) AGMC/KPC

APP DEVELOPERS:

Bruce Geerdes, IOS and Android
Some UX designer

DOMAIN EXPERTS:

Kyle Denlinger, PT, DPT, OCS, CSCS, FAAOMPT
Mariana Cuceu, X-Kaplan Instructor

ADVISORS:

Tom Jacky, CFO West Star Operating Company
YC Lee, Ph.D., Professor, CTO, Entrepreneur, AI Expert
Anita Retinger, Web Designer

LEGAL:

IP and Patent Lawyer

Investment & Next Steps

Invest in **your** own mind's and body's future!
PTs change lives. Help train them better!

- Pre-seed to enhance the MVP, and establish university pilots
- **Future expansion:** Later rounds to fund additional board domains

Please join us in revolutionizing adaptive board preparation
and lifelong learning at an Olympian-level scale!
Connect to discuss pilot partnerships and pre-seed
participation

 linkedin.com/in/olympialbakalis



**Thank you
for your time and interest in OlympianPT!**

We look forward to empowering new physical therapists,
and future professionals in other domains
collaborating with you!

 [linkedin.com/in/olympialbakalis](https://www.linkedin.com/in/olympialbakalis)