

1. Introduction

Pyresearch is an AI-driven company specializing in computer vision solutions for industries like agriculture, surveillance, automation, and environmental monitoring. Our advanced AI models, including YOLO and Florence-2, provide real-time, high-accuracy solutions that set us apart from competitors.

Unique Selling Proposition

- Cutting-edge AI solutions tailored to industry needs
- Faster and more efficient AI models compared to competitors
- Scalable and adaptable AI systems for diverse applications
- Integration of thermal technology for enhanced detection and analytics

2. Market Opportunity

The AI industry is experiencing exponential growth, and Pyresearch is uniquely positioned to capitalize on this trend.

Industry Growth

- The global AI market is projected to reach **\$1.8 trillion by 2030**
- Increasing adoption of AI in automation, agriculture, and surveillance
- Rapid advancements in AI-powered thermal imaging applications across industries

Problem-Solution Fit

- AI adoption remains limited due to cost and complexity
- Pyresearch simplifies AI implementation for businesses through customizable, scalable solutions
- Thermal imaging AI solutions enhance security, predictive maintenance, and health monitoring

Target Audience

- Businesses in agriculture, automation, and surveillance
- AI-driven enterprises looking for specialized solutions
- Investors seeking scalable AI ventures
- Government agencies focused on security and environmental monitoring

3. Business Model

Pyresearch generates revenue through multiple channels, ensuring financial sustainability and growth.

Revenue Streams

- AI SaaS subscriptions (Cloud-based AI models for businesses)
- One-time AI model sales (Custom AI solutions for enterprises)
- Consulting & AI training services
- Enterprise AI licensing & partnerships
- Thermal imaging AI solutions for industrial and commercial use

Scalability Strategy

- Expanding from **computer vision to generative AI**
- AI Marketplace (selling pre-trained models)
- API monetization (AI-as-a-Service)
- Expansion into thermal AI solutions for predictive maintenance and security

4. AI Technology & Innovations

Pyresearch is built on proprietary AI innovations that give it a competitive edge.

Key Technologies

- **YOLO & Florence-2** for high-precision real-time detection
- **AWS & TensorFlow Lite** for scalable AI deployment
- **Custom AI models** tailored for various industries
- **Thermal AI technology** for predictive maintenance, surveillance, and industrial monitoring

Showcased Projects

1. **Chicken Weight Estimation** – Used YOLOv8 for weight estimation via ellipse fitting.
2. **Oil Spill Detection** – AI-powered environmental monitoring system.
3. **Thermal Imaging for Industrial Safety** – AI-powered predictive maintenance solution to detect overheating machinery before failures occur.
4. **AI-enhanced Surveillance with Thermal Detection** – Detects unauthorized access in low-visibility conditions using thermal cameras.
5. **Precision Agriculture with Thermal AI** – Optimizes irrigation and crop monitoring through temperature-based analysis.

5. Competitive Advantage

Pyresearch differentiates itself through:

Feature	Pyresearch	Competitor A	Competitor B
Real-time AI Detection	☑	✗	✗
Customizable AI Models	☑	☑	✗
API Integration	☑	✗	☑
Thermal AI Solutions	☑	✗	✗

6. Financial Projections & Investment Opportunity

Pyresearch is seeking investment to accelerate growth and innovation.

Funding Requirements

- Seed/Series A investment
- Allocation: R&D, talent acquisition, marketing, expansion

Revenue Projections

Year	Revenue Projection	Profit Margin	Market Share
2025	\$500K	30%	2%
2026	\$1.2M	35%	5%
2027	\$5M	40%	10%

7. Applications of Thermal Technology

Pyresearch’s AI-powered thermal imaging solutions enhance efficiency and safety across multiple industries:

1. Industrial Predictive Maintenance

- AI-powered thermal sensors detect overheating components in machinery, reducing downtime.
- Early identification of faults prevents costly repairs and production losses.

2. Surveillance & Security

- AI-driven thermal imaging cameras detect intruders in complete darkness or adverse weather conditions.

- Enhanced threat detection for military, border security, and law enforcement applications.

3. Agriculture & Livestock Monitoring

- Thermal imaging identifies sick animals by detecting abnormal body temperature patterns.
- Precision irrigation and crop health analysis using temperature variations.

4. Healthcare & Medical Diagnosis

- AI-powered thermal scans help in detecting inflammation, infections, and early-stage diseases.
- Non-invasive monitoring of patient vitals for early diagnosis and prevention.

5. Environmental Monitoring

- Thermal AI solutions detect oil spills, wildfires, and industrial gas leaks.
- Real-time monitoring of critical infrastructure for disaster prevention.

8. Contact & Investor Inquiry

We invite investors to be part of Pyresearch's growth journey. For inquiries, visit our dedicated investment page at **pyresearch.org/invest**.

Contact Us

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