Applicant Profile & Situation Statement

1. Identity

- **Name:** Han, Bo Jun
- **Age:** 43
- **Nationality:** Republic of China (R.O.C. Taiwan)

2. Academic & Cognitive Baseline

- **Highest Degree:** Master of Arts in Political Science, International Relations Division, National Taiwan University (**QS 2025 World University Ranking: 68th**).
- **Research Specialization:** Specialized in Public International Law, WTO Dispute Settlement Mechanisms, Rare Earths and Critical Raw Materials Embargoes, International Political Economy, and Geopolitics. This endows me with the capacity to architect distributed systems from the macro-perspectives of "Digital Sovereignty" and "Resource Allocation."
- **Cognitive Certification:** Verified via Wechsler Adult Intelligence Scale - Fourth Edition (WAIS-IV) at Taoyuan General Hospital, Ministry of Health and Welfare:
  - **Full Scale IQ (FSIQ): 127** (Superior)
  - **Verbal Comprehension Index (VCI): 132** (Very Superior)

3. The Pivot & Project Genesis

- **Deep Work & Isolation:** Since March 2025, I ceased employment to dedicate myself full-time to cross-disciplinary self-study and research in Computer Science. Over the past year, I have conceptualized and accumulated over **100** experimental projects.
- **The Birth of Mnemosyne:** Among these 100+ projects, I selected **Mnemosyne (VARTA System)** as the final breakthrough point. While other projects possess equal mathematical and physical derivations, I deem Mnemosyne the most acceptable yet revolutionary entry point for the current world.
- **Philosophical Belief:** I subscribe to **Mohism**, specifically "Universal Love" and "Non-Aggression." This is the core driving force behind my design of Mnemosyne—breaking computational monopolies through technology to realize fair resource allocation and defensive security.
- **The Sprint Phase:** In the past month, I poured all my energy into the theoretical construction of Mnemosyne. From ideation and physical derivation to identifying 14 core theorems and attempting to write verifiable code, everything was completed by me alone.

4. Critical Status & Honesty

- **Financial Cliff:** My current total assets remain at only **2,000 NTD (approx. 61.5 USD)**. I am on the edge of survival, imminent inability to afford internet connectivity and basic food.
- **Development Reality:**
  - **Mathematical Model:** Established and rigorous (containing 14 theorems and physical derivations).
  - **Code:** Still aligning with the mathematical model; not yet perfect.
  - **Reason:** I do not mask its incompleteness, as this is precisely why the Grant is needed. It is not that I cannot write perfect code, but that I no longer have the **time and resources** to continue polishing it in a zero-income state. I must submit now.

5. Purpose of Grant

I am not applying for this fund to seek long-term sustenance, but as a **"Transitional Lifeline (Bridge Funding)."** The specific uses are as follows:
1. **Survival Maintenance:** Paying for the most basic internet and food costs, allowing me to survive to complete and launch the Mnemosyne system.
2. **Verification Equipment:** Purchasing minimal hardware resources and cloud services to complete system experimentation and verification.
3. **Academic Launchpad:** Applying for Computer Science (CS) PhD programs in the EU Schengen Area (specifically CEE countries). The funds will cover visa application fees, airfare, and **rent/living expenses for the first three months after landing**.
** Note: I possess sufficient technical capability; once settled, I will support myself through technical work and do not require the funder to cover all expenses during my PhD studies.*

6. Conclusion

You do not have to trust me as a person, but please trust the **Math** and the **Physics**.
Please read my mathematical derivations and scrutinize my physical design.
Give me this funding, let me survive, and I will use this system to thoroughly change the world.

Mnemosyne Project: Systemic Deep Deconstruction

This is a **"Declaration of Computational Independence in the Post-Quantum Era."** It is not merely a software protocol, but a paradigm shift attempting to replace traditional mathematical assumptions with **Physical Laws** (Thermodynamics and Relativistic Light Cones).

1. Intent

The core intent of Mnemosyne is the **"Physical Reconstruction of Digital Sovereignty."**

It attempts to prove: In an era where Moore's Law is failing and the threat of Quantum Computers is looming, humanity should no longer rely on "Computational Complexity" (assuming the adversary cannot calculate it) to protect privacy, nor should we be constrained by "Speed of Light Limits" that force computation to be centralized. It attempts to establish a global distributed AI computing network based on **Physical Limits**, **Mathematically Verifiable**, and **Economically Self-Sufficient**.

2. The Adversaries

The document explicitly names three adversaries in Section 1.3.3:

1. **The Computing Oligarchy (MAMANGO):**
   - **Targets:** Meta, Amazon, Microsoft, Apple, Nvidia, Google, OpenAI.
   - **Charge:** Using the physical limitation of light-speed latency to justify the "necessity of centralized data centers," thereby monopolizing AI production data.
   - **Countermeasure:** Breaking geographical constraints via "Negative Latency" prediction mechanisms, allowing 7 billion edge devices globally to collaborate like a single supercomputer.
2. **State-Sponsored Surveillance:**
   - **Targets:** Five Eyes, the Great Firewall, and other state machines possessing quantum computing power.
   - **Charge:** Exploiting vulnerabilities in mathematical encryption to conduct mass surveillance.
   - **Countermeasure:** Establishing a "Thermodynamic Barrier," making the energy required for decryption exceed the total energy of the universe.
3. **The Old Guard (Traditional Cryptography & Inefficient Blockchain):**
   - **Targets:** RSA/ECC systems (to be crushed by Shor's Algorithm) and Bitcoin PoW.
   - **Countermeasure:** Replacing mathematical puzzles with "Physical Entropy"; replacing hash collisions with "Proof of Useful Work (PoUW)."

---

3. The Creation

It aims to create a **Mnemosyne Swarm**: A **Post-Quantum, Physically Secure, Superluminal** Global Decentralized Compute Grid (GDCG).

---

4. What has it "Actually" Created in Mathematical Models & Physical Derivations?

This document constructs a rigorous system containing 14 theorems. Its most original contribution lies in simultaneously breaking the limits of **Energy** and **Time**:

A. Temporal Transcendence — Breaking the Light Cone

This is the system's most concealed yet astounding derivation, located in **Theorem 9.2-Extended** and **Theorem 9.2-Ultimate**.
* **Physical Context:** Traditional distributed systems are constrained by Einstein's relativistic speed of light c. Transnational communication latency (e.g., NY-Singapore 246ms) makes distributed training nearly impossible.
* **Mathematical Creation: Bidirectional Speculation Convergence**.
* It derives the effective latency formula: $T_{effective} = (1 - p) \cdot T_{network}$.
* Where p is the AI's prediction accuracy. When edge nodes and central nodes achieve thought synchronization via "Knowledge Distillation," causing $p \to 1$, **Effective Latency** $T_{effective} \to 0$.
* **Negative Latency:**
* In **Theorem 9.2-Ultimate**, it further proposes an "Absolute Redundancy" architecture. By pre-calculating all possible future paths (akin to Dr. Strange viewing all futures), the system can push results to the edge **before** the user issues the request.
* **Practical Significance: It decouples causality** at the logical level, trading "Compute (Prediction)" for "Time," achieving a superluminal real-time experience for the user.

B. The Thermodynamic Barrier — Breaking Compute Limits

- **Theorem 8.3 (Landauer Barrier):**
  - **Content:** Anchoring information security to the Second Law of Thermodynamics.
  - **Derivation:** Proves that to brute-force Mnemosyne data processed via PQ quantization, the attacker must consume energy $E_{attack} \approx 10^{38,778}$ Joules.
  - **Significance:** The total energy of the observable universe is only approx. 10^{69} Joules. This proves the attack is **physically impossible**, even if the adversary possesses infinite quantum computing power, they cannot create energy out of nothing to reverse entropy.

C. Information Theoretic Privacy Quantization

- **Theorem 7.1 (PQ Information Quantization & Loss):**
  - Redefines "Product Quantization" as an "Information One-Way Valve."
  - Proves that after processing, **98.44%** of the original information is physically discarded. According to Fano's Inequality, the adversary's reconstruction error rate $P_e \geq 0.9844$. This is not encryption; this is **destruction**.

D. Unification of Hardware Heterogeneity

- **Theorem 6.1 (HMCM):**
  - Establishes an 8-layer memory model and a 5-dimensional cost function, mathematically proving how to fuse a 2GB Raspberry Pi and a 64GB Workstation into a single logical entity, solving the fragmentation problem of edge computing.

---

5. Distinction from State-of-the-Art (SOTA)

Mnemosyne challenges existing mainstream technology routes across multiple dimensions, especially in handling **Time Latency**:

Domain	Current Technology (SOTA)	Mnemosyne Innovation & Distinction
Network Latency	**Edge Caching / CDN** Passive content caching, cannot handle dynamic computation. **Limit:** Still bound by light speed (RTT), low efficiency for cross-border training.	**Negative Latency (Theorem 9.2-Extended)** Active prediction and pre-computation. **Breakthrough:** Offsetting physical latency via AI prediction, logically achieving $T \to 0$ **(Superluminal)** synchronous experience.
Privacy Protection	**Differential Privacy (DP-SGD)** Injecting noise, sacrificing model accuracy. **Defect:** Privacy budget depletes over time.	**Physical Info Loss (Theorem 7.1/8.3)** Physically discarding 98.44% of information. **Advantage:** Based on irreversible physical laws, does not decay over time, unconditionally secure.
Post-Quantum Security	**NIST PQC (Kyber/Dilithium)** Based on harder mathematical problems. **Defect:** Still a mathematical assumption, may be broken in the future.	**Thermodynamic Barrier (Landauer Barrier)** Based on thermodynamic laws. **Advantage:** As long as physical laws hold, quantum computers cannot breach energy conservation.
Distributed Consensus	**Paxos / Raft / HotStuff** Assumes honest nodes, relies on synchronous networks. **Defect:** Fragile in Byzantine environments.	**Swarm Consensus (Protocol 1)** Combines BFT with Merkle verification, safety proved via TLA+ in malicious environments.
Blockchain Incentive	**Bitcoin (PoW) / Filecoin** Wasting energy on hashing or storage only. **Defect:** Compute power decoupled from actual business.	**Proof of Useful Work (PoUW)** 5-Dimensional Incentive. **Advantage:** Converting compute power directly into AI intelligence, not waste heat.

Summary

Mnemosyne is a **Hardcore "Dimensional Strike."**

- **Against Quantum Supremacy:** It does not compete on Compute; it competes on **Energy (Thermodynamics)**.
- **Against Light Speed Limits:** It does not compete on Speed; it competes on **Prediction (Causal Decoupling)**.
- **Against Digital Monopoly:** It does not compete on Capital; it competes on **Swarm Collaboration (Entropy)**.

This is a blueprint attempting to use the **Ultimate Laws of Physics** (Second Law of Thermodynamics & Light Cones) to fight for **Digital Freedom** for humanity.