🔒 VeilScore

Private Credit Scoring with Zero-Knowledge Machine Learning

Problem

Traditional credit scoring systems force users to expose sensitive financial data to lenders, creating significant privacy risks and potential for data breaches. Current solutions offer no way to prove creditworthiness without revealing personal information, leaving users vulnerable to identity theft, data misuse, and privacy violations.

Key Pain Points:

- Users must share sensitive financial data (income, debt, credit history)
- Data stored in centralized databases vulnerable to breaches
- No cryptographic proof of creditworthiness without data exposure
- Limited transparency in credit scoring algorithms

Solution

VeilScore revolutionizes credit scoring by combining zero-knowledge machine learning (ZKML) with blockchain technology. Our platform enables users to generate verifiable credit scores on-chain without revealing any sensitive financial data.

99%+

Model Accuracy

<20s

Proof Generation

0.9988

AUC-ROC Score

100%

Data Privacy

How It Works:

1. User inputs financial data through secure interface (data never leaves user control)

2. LightGBM ML model processes data (trained on 200K LendingClub samples)

3. EZKL generates Groth16 zero-knowledge proof verifying score calculation

4. Proof verified on-chain via smart contracts on Mantle Network

5. User receives verifiable credit score without exposing underlying data

Business Model

Revenue Streams:

- **API Licensing:** Charge DeFi protocols and lending platforms for ZKML credit scoring API access

- **Transaction Fees:** Small fee per credit score generation and proof verification

- **Enterprise Solutions:** White-label ZKML infrastructure for traditional financial institutions

- **Data Insights (Privacy-Preserving):** Aggregate anonymized credit trends without exposing individual data

Target Customers:

- DeFi lending protocols (Aave, Compound, MakerDAO)

- Traditional banks seeking privacy-preserving credit assessment

- Fintech companies requiring verifiable credit scores

- Blockchain networks needing ZKML infrastructure

Roadmap

Q1 2024

- Complete hackathon MVP

- Deploy on Mantle mainnet

- Integrate with 2-3 DeFi protocols

- Expand team (2-3 developers)

Q2 2024

- Multi-chain deployment (Ethereum, Polygon)

- Enhanced ML model (additional features)

- Mobile app development

- Partnership with major lending platform

Q3-Q4 2024

- Enterprise API launch

- Regulatory compliance framework

- International expansion

- Series A fundraising

Team

Dennis Nyagah

Full-Stack Developer & ML Engineer

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Expertise in machine learning, zero-knowledge proofs, and blockchain development. Built the complete ZKML pipeline and smart contracts.

Compliance Declaration

⚠️ Regulatory Disclosure

VeilScore Compliance Status:

- **Regulated Assets:** VeilScore does NOT directly handle regulated financial assets or securities. The platform provides credit scoring infrastructure and zero-knowledge proofs.

- **Data Privacy:** Compliant with privacy-by-design principles. No personal financial data is stored on-chain or in centralized databases.

- **Financial Services:** VeilScore is a technology infrastructure provider, not a licensed financial institution. Users and integrated protocols are responsible for their own regulatory compliance.

- **KYC/AML:** VeilScore does not perform KYC/AML checks. Integrated protocols must handle their own compliance requirements.

- **Jurisdiction:** Currently operating as a technology demonstration. Full regulatory compliance will be established based on deployment jurisdiction and use cases.

Note: This is a hackathon MVP. Production deployment will require appropriate legal and regulatory review based on target markets and use cases.

Links & Resources

🌐 **Live Demo**   💻 **GitHub**   📜 **Smart Contract**