EREN SONMEZ

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SUMMARY

Software Engineer with a strong foundation in backend systems, automation, and distributed infrastructure. Experienced in building scalable services using Python, FastAPI, and Docker, with a track record of improving system performance and reliability by up to 60%. Proven ability to design production-ready observability platforms and ML pipelines. Passionate about clean architecture, performance optimization, and solving real-world engineering problems at scale.

EDUCATION

Florida International University   **Aug 2025**
Bachelor's, Computer Science
  - **Coursework:** Data Structures and Algorithms, Machine Learning, Artificial Intelligence, Distributed Systems, Software Engineering, Database Management, Operating Systems, OOP

Yeditepe University   **Dec 2021**
Bachelor's, Electrical & Electronics Engineering
  - **Coursework:** Circuit design, electromagnetics, applied mathematics, C/C++ programming for engineering applications

PROJECTS

Observian - Scalable System Monitoring Platform (GitHub)
  - Production-grade observability and log ingestion system with real-time metrics, API control, and async workers.
  - Designed a modular FastAPI backend with PostgreSQL star schema, partitioning, and Prometheus-based metrics for real-time log and event ingestion, mimicking principles of messaging infrastructure.
  - Built secure REST APIs and async workers for GitHub event ingestion, live log feeds, pruning, and health checks with thread-safe control logic.
  - Deployed via Docker Compose with environment configs, pre-wired Prometheus + Grafana dashboards, and optional Helm support.
  - Engineered observability-first system architecture with structured logging, error handling, and API key-protected control plane.
  - Stack: Python, FastAPI, PostgreSQL, Prometheus, Grafana, Docker, SQLAlchemy, Pydantic, GitHub API, Linux, Render

Credit Card Fraud Detection - ML Research Project
  - Modeled fraud patterns in 6M+ transactions using Scikit-Learn (Random Forest, Logistic Regression).
  - Performed feature engineering, handled class imbalance, and tuned thresholds to optimize precision/recall tradeoff.
  - Achieved 0.84 F1-score on held-out test set and evaluated model for deployment under various alert rate scenarios.

15-Tile Puzzle Solver - ShellHacks Hackathon Project (GitHub)
  - Implemented real-time solving algorithm using A* search and object-oriented GUI rendering logic.
  - Guaranteed solvable states using Fisher-Yates shuffle; added GUI controls for manual play and solution playback.
  - Tech Stack: Python, A* Search, Tkinter, OpenCV, NumPy.

WORK EXPERIENCE

Optimum7   **Apr 2022 - Feb 2025**
Software Engineer – Systems & Automation   *Miami, FL*
  - Designed and deployed Python-based backend services and automation workflows, integrating REST APIs and event-driven logic to reduce manual tasks across operations.
  - Improved legacy system performance, increasing data processing throughput and response latency by 4060% using caching and asynchronous patterns.
  - Built and maintained reusable internal tools with robust logging, alerting, and retry logic, enhancing system reliability and fault tolerance.
  - Developed over 20+ automation pipelines for infrastructure, marketing ops, and data sync, enabling scalable internal workflows.
  - Collaborated with DevOps and backend teams to identify and resolve infrastructure bottlenecks; contributed to the adoption of observability tools and metrics tracking.

SKILLS

  - **Languages**: Python, Java, SQL, Bash, C++, Go (learning)
  - **Frameworks**: FastAPI, SQLAlchemy, Pydantic, Pandas, NumPy, Scikit-Learn, OpenCV
  - **Tools and DevOps**: Git, GitHub, n8n, Docker, Kubernetes, Prometheus, Grafana, Helm, Tableau, CI/CD, Monitoring, Debugging, Logging, ETL Pipelines
  - **Cloud & Infrastructure**: PostgreSQL, Linux, AWS (EC2, Lambda, S3), Networking fundamentals (TCP/IP, load balancing), Distributed Systems, APIs
  - **Software Engineering Concepts**: Security Concepts (TLS/SSL), Software Development Life Cycle, Continuous Deployments, Source Control Management, Agile Methodology, Object-Oriented Programming (OOP), Data Structures & Algorithms, Code Reviews