

PROFESSIONAL SUMMARY

Full-stack software engineer with deep specialization in TypeScript, modern React architectures, and high-throughput Node.js systems. Creator of published open-source libraries and production-grade applications engineered for performance: implementing write-behind distributed caching, bijective cryptographic slug mapping, sub-millisecond response latencies, and 160+ automated unit, integration, and property-based test suites.

TECHNICAL SKILLS

Languages	TypeScript, JavaScript (ESNext), SQL, HTML5, CSS3, Bash
Frontend & UI	React 19, Next.js 16 (App Router), Tailwind CSS v4, HTML5 Canvas API, Framer Motion, ARIA Accessibility
Backend & Data	Node.js, Express, PostgreSQL 16, Redis (Upstash), Drizzle ORM, RESTful API Design, Zod Validation
DevOps & Systems	Docker & Docker Compose, Linux Server Administration, Nginx Reverse Proxy, Git & GitHub, CI/CD
Quality & Security	Vitest (Unit & Integration), Property-Based Testing (fast-check), SSRF Defense, Distributed Locks, TDD

FEATURED ENGINEERING PROJECTS

Shortesh Kon — High-Throughput URL Shortener & Analytics (Full-Stack Engineer)

2026

Live: shortesh-kon.pouyahadidi.ir • Code: github.com/hadidipouya/shorteshkon-nextjs •

Next.js 16, React 19, TypeScript, PostgreSQL 16, Drizzle ORM, Upstash Redis, Vitest

- Architected write-behind caching pipeline: Redirects served straight from Redis memory with sub-millisecond latency; buffered click metrics atomically (HINCRBY) and batched to PostgreSQL via a distributed-lock cron worker.
- Eliminated DB collision checks in O(1): Designed a 32-bit bijective Feistel cipher mapped to Sgids, guaranteeing mathematically collision-free, non-sequential short codes without retry loops or lookup overhead.
- Hardened application security: Engineered multi-layer SSRF defenses with DNS-level validation blocking private RFC-1918 and cloud metadata IP ranges, complemented by Redis sliding-window rate limiting.
- Quality & Localization: Authored 127 passing unit and integration tests (Vitest); implemented full English/Persian localization with runtime RTL/LTR directional switching and Jalali calendar support.

React Throwable Slider — Interactive Physics Component Library (Creator & Maintainer)

2025 – 2026

NPM: npmjs.com/package/react-throwable-slider • Code: github.com/hadidipouya/react-throwable-slider •

React 19, TypeScript, HTML5 Canvas API, Tailwind CSS, Vite

- Published open-source library on NPM: Designed a zero-runtime-dependency physics slider component installable via NPM or scaffolded directly via npx react-throwable-slider.
- 0% idle CPU animation architecture: Engineered an on-demand requestAnimationFrame loop that activates exclusively during user aiming and ballistic trajectory flight, shutting down completely at rest.
- Canvas simulation & Accessibility: Computed parabolic flight dynamics with gravitational acceleration and real-time trajectory predictions; implemented full unified Pointer Events and keyboard ARIA navigation.

Backgammon TUI — Decoupled Rule Engine & Terminal Game (Creator & Developer)

2026

NPM CLI: npx backgammon-tui • Code: github.com/hadidipouya/nodejs-backgammon •

Node.js, TypeScript, React 18, Ink 5, Zod, Vitest, Fast-Check

- Pure decoupled domain rule engine: Implemented official tournament Backgammon rules with zero UI dependencies, featuring maximal turn-sequence calculation, blot hitting, bar entries, and move history undo/rollback.
- Heuristic AI opponent: Engineered an autonomous AI evaluator scoring board topology, pip counts, vulnerability probabilities, and bearing-off states to compute real-time counter-moves.
- Property-based testing: Enforced rock-solid state invariants via 32 unit and fuzz test suites combining Vitest with fast-check across thousands of generated board transitions.

ENGINEERING EXPERIENCE

Independent Software Engineer — Product & Systems Engineering

2024 – Present

Full-Stack Development, System Architecture & Open Source

- Containerized deployments: Orchestrated multi-tier production environments using Docker Compose; configured Nginx reverse proxies with SSL termination, HTTP compression, and automated caching headers.
- Database & API engineering: Structured relational schemas with PostgreSQL and Drizzle ORM; engineered type-safe REST APIs with JWT authentication, granular permission middleware, and Zod payload validation.
- Test-Driven Reliability: Maintained disciplined TDD practices with automated Vitest suites and GitHub Actions CI pipelines, preventing regression risks across core business flows.

EDUCATION

B.Sc. in Computer Science

Islamic Azad University, West Tehran Branch
2024 – Present (Expected 2027)

LANGUAGES

Persian: Native
English: Professional Working Proficiency (Technical Fluency)