

Yonatan Reich

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ABOUT ME

Motivated Computer Science student at Bar-Ilan University with a dual passion for low-level systems programming and high-performance creative web development. I love bridging the gap between rigorous backend architecture and interactive frontend experiences). Always seeking to build scalable, optimized software that solves complex problems.

EDUCATION

Bar-Ilan University

Ramat Gan, Israel

Bachelor of Science in Computer Science

Expected Graduation: March 2027

- **Relevant Coursework:** Data Structures, Algorithms (Flow Networks, Shortest Paths), Operating Systems, Discrete Mathematics, Object-Oriented Programming, Systems Programming.

TECHNICAL SKILLS

Languages: C, C++, JavaScript, Java, Python

Web Technologies: Node.js, Express.js, React.js, React Three Fiber (R3F), Three.js, HTML5/CSS3

Systems & Tools: Linux, Git, Docker, GCC, GDB, Low-level Debugging, Multithreading

Core Concepts: Data Structures & Algorithms, OS Kernel Development, RESTful APIs, 3D Graphics Math, Computer architecture

PROJECTS

Interactive 3D Physics Engine & Portfolio | *React, Three.js, R3F, Cannon.js*

Jan 2026

- Architected a high-performance 3D web application integrating a physics engine with a React frontend to showcase technical projects.
- Implemented complex vector mathematics and raycasting for a custom "projectile" interaction system, allowing users to interact with UI elements via 3D collisions.
- Optimized rendering performance using React hooks to manage game loops and minimize garbage collection overhead, ensuring 60FPS on varied hardware.
- Designed a responsive glassmorphism UI system with dynamic state management to handle modal transitions and audio state without re-rendering the 3D canvas.

High-Performance Cloud Storage Service (Drive Clone) | *Node.js, Express, C++, Docker*

Ongoing

- Developing a scalable file storage service mimicking Google Drive architecture with a focus on I/O performance.
- Building a custom native C++ addon for Node.js to handle performance-critical file operations, bridging high-level JavaScript with low-level system calls.
- Containerizing the application using Docker to ensure consistent deployment across different environments.
- Implementing a RESTful API with Express.js to manage file uploads, retrieval, and directory structures.

Sankey Job Hunter | *React, Data Visualization, LocalStorage*

Ongoing

- Developing a job application tracking dashboard that visualizes the recruitment funnel (Applied → Interview → Offer) using dynamic Sankey diagrams.
- Implementing algorithms to transform raw application data into directed graph structures suitable for visualization rendering.
- Designing a client-side persistence layer to securely store user data locally without requiring a dedicated backend.
- Focusing on responsive UX design to allow intuitive drag-and-drop management of job application statuses.

LANGUAGES

Hebrew: Native

English: Fluent