Shay Frishwasser -Junior Developer

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Hardworking, result oriented high school student, passionate about software development and entrepreneurship, self-taught and experienced in teaching programming, robotics, and Arduino. Member of the technical team for municipal ceremonies.

Education

2025-current : Magshimim -The National Cyber Program for Outstanding Youth.
2025-Current: Ort Bialik , Studies in 5 extended units in the subjects: Physics, Software, Mathematics, English.
I received an award of excellence from the CEO of the ORT Network, an award of excellence from the mayor of Kiryat Bialik, awards for first places in national competitions for robotics, physics and chemistry, Including national awards of excellence for some of the projects

Experience

2024-Present – ORT Dafna, Kiryat Bialik - Teacher in the ORT network.
Teacher for software, robotics and Arduino subjects, as well as a presenter for the PFM exams of the Scientific and Technological Reserve.

Personal Projects

- **Project: Volleyball analyzer**
  Technology: *Python, OpenCV, YOLOv5, Flask, HTML, CSS, JavaScript*

Developed a real-time volleyball serve analysis system that processes user-uploaded videos to isolate the ball's trajectory and provide tailored improvement tips. Overcame outdoor lighting challenges through advanced image enhancement techniques, enabling accurate ball tracking with YOLOv5 and OpenCV.

- **Project: Underwater Debris Detection & Analysis System.**
  Technology: *TensorFlow, Flask, Python, HTML, CSS, JavaScript, Pandas, Matplotlib, ReportLab*

Developed an automated web-based system that enhances underwater images and accurately detects and classifies marine debris using a custom-trained TensorFlow model. Generates interactive visual reports with detection confidence and detailed downloadable PDFs, integrating a secure login system for organizational use.

- **Project: "SEE SHARP" –An automation C# Code Testing and Grading System.**
  Technology: *C#, MySQL, PHPMailer, SMTP, PDO, TLS, HTML, CSS, JavaScript, Compiler, Hashing, Prism.js, Input Validation, Sandboxing*

Developed a comprehensive web platform enabling students to submit C# code assignments which are automatically tested against predefined inputs and outputs for grading. Features include plagiarism detection via hashing, role-based access for teachers and students, secure multi-step authentication, sandboxing, emails, hashing and grade management with exportable Excel reports.
*The Ministry of Education is currently implementing the system.

- **Project: AI**-Based Swimming Technique Monitoring
  Technology: *OpenCV, TensorFlow, Matplotlib.*

Developed an AI-driven system that continuously analyzes swimming styles and detects incorrect movements, providing actionable feedback for technique improvement. Includes adaptive learning for personalized coaching.

- **Project: Tash Net –Unit Communication & Management for the IDF**.
  Technology: *Node.js, HTML, CSS, Apache, Email Integration, Anti-DdoS*

Tash Net is a secured, Hebrew-language web platform for managing military personal support (תש"ש) requests, including form submissions, rights database, and eligibility calculators. Built with Node.js, HTML/CSS/JS and hosted on Apache, it supports up to 100 concurrent users with built-in anti-DDoS protection, input sanitization, and responsive design. The system includes smart forms, dropdowns, email integration, and dynamic rights logic — all without machine learning, based on custom rule mapping.

- **Project:** AI-powered Discord Bots & Ticket Management
  Technology: *Node.js, Python, AI Models, Apache*

Developed AI-enhanced Discord bots capable of managing up to 10 simultaneous tickets, automating responses based on custom tag recognition models, and integrating IP-based product eligibility with encrypted file management for FIVEM CFX assets.

- **Project:** Real-Time FIVEM Anti-Cheat & Exploit Prevention
  Technology: *Lua, HTML, CSS, JavaScript, Node.js, CFX Assets*

Implemented real-time anti-exploit mechanisms with front-end and client-side validation to prevent abuse. Features IP-based purchase verification with admin panel controls and trigger-based protection tailored for FIVEM environments.

❖ **Project: Real-Time Driver Drowsiness Detection System**
Technology: *OpenCV, Matplotlib, Real-time Video Analytics*
A real-time fatigue detection system that monitors facial cues and head movements to alert drivers visually and audibly. Employs adaptive algorithms to minimize false positives and learn individual driver behavior over time.

❖ **Project: Dash Ort System**
Technology: *Node.js, HTML, Apache, Google Sheets API, Anti-DDoS mechanisms.*
A secure Node.js-based platform enabling users to send, store, and retrieve greeting messages with dynamic real-time updates every 10 seconds. Implement XSS protection, forbidden word filtering, and robust input validation for safe user interaction under heavy concurrent use (up to 100 users).

❖ **Project: Delivery Route Optimization & Driver Management**
Technology: *Visual Studio, Dijkstra Algorithm, Simulation Software*
Designed a delivery management platform optimizing driver assignments and routes using Dijkstra's algorithm, enabling multiple pickups per driver.
*Awarded breakthrough recognition at FLL Robotics Competition (2022).

❖ **Project: Interactive Educational Escape Rooms for Hospitalized Students**
Technology: *HTML, CSS, JavaScript*
Developed award-winning interactive digital escape rooms aimed at engaging hospitalized students through gamified learning.
*Awarded first place at the ISTEAM ORT National Competition (2022).

❖ **Project: Assistive Device for Medicine Bottle Opening**
Technology: *Mechanical Engineering, Vacuum Systems, UI Design*
Developed an innovative device for users with limited hand mobility that automates medicine bottle opening without requiring simultaneous two-hand operation.
*Awarded third place at ISTEAM ORT Makers Category (2023).

❖ **Project: AI Chatbot for Interpreting Emoticons for People with Communication Challenges**
Technology: *Node.js, Frontend, Brain.js AI Framework*
Built a conversational AI chatbot using tag-based recognition to help users with communication difficulties understand emoticon meanings through guided dialogue.
*Awarded first place winner at "I Can Too" competition by the Ministry of Education and Yad Sarah (2022).

❖ **Project: Public Dog Waste Collection Reward Platform**
Technology: *Node.js, Web, jsQR, JWT, UUID, Geolocation API, TensorFlow.js, MySQL*
Implemented a city-wide reward system in collaboration with Kiryat Bialik municipality, combining QR code scanning, GPS/time validation, image verification, and SQL-based anti-fraud mechanisms.
*Award-winning broad project at Bar-Ilan University competition (2023).

❖ **Project: Household Water Usage and Purification Control System**
Technology: *Software Simulation, Activated Carbon Filtration Model*
Developed software to manage water consumption based on household occupancy and an activated carbon water purification simulation.
*Awarded third place at 100CC Competition (2023).

Additional achievements and Competitions

- Third place, Ramon Middle School Olympiad (2023)
- Participation in Google, Salesforce, and Ministry of Education's Advanced Technology Festival (2022)
- SALL Environmental Activism QR Treasure Hunt Game (2022)
- Energy Balance Home Management Software (2022)
- P2L Collaborative Learning Management System (2022)

Volunteering

2024-Current -Member of the municipal team responsible for digital (sound, lighting, and visual displays) at the Holocaust Remembrance Day and Memorial Day ceremonies.