Dino Fazlić

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GitHub:

Education

- **University of Sarajevo, Faculty of Science** — Sarajevo, BiH
  Bachelor in Computer Science — *Oct. 2021 – Jun. 2025*

Projects

- **Tennis Match Predictor**
  Academic Project — *November 2024*
  - **Algorithm Development:** Built a dynamic programming model in C++ that computes win probabilities at every level—points (gems), tie-breaks, sets, and full best-of-three matches
  - **Scenario Analysis:** Simulated how varying serve and return probabilities affect match outcomes.
  - **Real-Time Estimation:** Integrated live score updates, serve success rates, and historical performance data into the DP model to calculate dynamic win probabilities.
  - **Lessons Learned:** Deepened expertise in probabilistic modeling and reinforced best practices in algorithm optimization.

- **Matrix Calculator**
  Academic Project — *December 2023*
  - **Comprehensive C++ Library:** Developed a modular library for matrix operations—addition, subtraction, multiplication, exponentiation, transposition, inversion, and determinant calculation.
  - **High-Performance Multiplication:** Integrated Strassen's divide-and-conquer algorithm to accelerate large-matrix multiplication.
  - **Robust Inversion Methods:** Implemented Gauss–Jordan elimination for matrix inversion, with custom exception handling for singular or malformed inputs.
  - **Expression Parser:** Built a recursive-descent parser to evaluate complex matrix expressions (parentheses, chained operations, negatives).
  - **Error Management:** Designed input validation and exception mechanisms to gracefully handle dimension mismatches and invalid operations.

- **HR Management Application**
  Academic Project — *November 2024*
  - **Full-Stack Implementation:** Built a web-based HRM system using Node.js/Express for the backend, PostgreSQL for data storage, and EJS templates for the frontend.
  - **Secure Access Control:** Implemented JWT-based authentication and HttpOnly cookies to enforce admin vs. applicant permissions.
  - **Automated Notifications:** Integrated Nodemailer to dispatch interview invitations and status alerts.
  - **Applicant Portal:** Designed a responsive interface where applicants can browse openings, submit their materials, and monitor status updates.
  - **Admin Dashboard:** Developed tools for recruiters to review submissions, assign rankings, comment on profiles, and schedule interviews.

- **Online Bookstore**
  Academic Hackaton *November 2024*
  - **Full-Stack E-Commerce Prototype:** Developed a web-based bookstore to browse, purchase, and read PDF books.
  - **Backend Services:** Built a Node.js/Express API with PostgreSQL to manage product catalog, shopping cart, and order history.
  - **Secure Authentication:** Implemented JWT-based login and HttpOnly cookies to distinguish customer and admin roles.
  - **Front-End Design:** Created a responsive UI using Bootstrap components for seamless browsing, checkout, and in-browser PDF streaming.
  - **Order Simulation:** Simulated payment workflows and recorded transactions in the database for audit-style tracking.
- **Triba Game**
  Academic Project *December 2024*
  - **Canvas Game Engine:** Built an interactive JavaScript game on HTML5 Canvas where players alternate picking three grid points to form triangles on a dynamic board, with built-in intersection detection to block invalid moves; the last player to complete a triangle wins.
  - **Scalable Design:** Enabled multiple grid sizes and difficulty levels, dynamically redrawing and recalculating win conditions.
  - **Responsive Controls:** Handled mouse/touch events for intuitive gameplay across desktop and mobile browsers.

Athletic Career

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Judoka Bosnia and Herzegovina
Competitive Athlete & Coach *2009 – Present*
- **Competition:** National champion with multiple 2nd/3rd-place national finishes and numerous regional medals.
- **Coaching:** Mentored junior athletes, leading to regional championships.

Skills

- **Languages:** C++, Python, JavaScript, SQL, Wolfram Mathematica
- **Technologies:** Node.js, Next.js, PostgreSQL, MS SQL, MySQL
- **Interests:** Judo, Football, Strength Training