

# Petar Isakovic

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## EDUCATION

### University of Waterloo

*Bachelor of Software Engineering, Honours, Co-op*

- Awarded **\$15,000** Scotiabank Software Engineering Scholarship for academic excellence.

Sept. 2024 – Apr. 2029

Waterloo, ON

**3.96 GPA**

## EXPERIENCE

### Mobile Game Developer

*Heseri.io*

- Collaborated with **Voodoo.io** to scale **Epic Plane Evolution (10M+ downloads)** on iOS and Android devices.
- Implemented core game mechanics in Unity (C#), contributing to a **7% revenue increase (\$5K+/day)** as measured by the Voodoo.io UA team via the GameAnalytics SDK and controlled A/B tests.
- Designed and polished **UI/UX** compatible with all mobile devices, adding haptics, Safe Area-aware layouts, clearer flows, and responsive transitions, reducing interaction friction and increasing **user retention by 4%**.
- Led the development of **ragdoll integration**, directing rig alignment with artists, engineering joint constraints, and optimizing physics to deliver seamless, production-quality animation–physics blending.

May 2025 – Present

Toronto, ON

### Founder & Executive Director

*GooseHacks*

- Attracted **200+ participants** and secured **11 sponsors** (Unity, Desmos, 1Password) by launching a highly responsive, interactive website with landing pages and streamlined registration, plus clear sponsor packages and tiers.
- Boosted the GooseHacks Instagram to **500+ followers** by engineering a custom JavaScript bot that strategically promoted the event by automatically following **2,000+** relevant hackathon enthusiasts with rate limits.
- Negotiated and executed sponsor deliverables (**workshops, prize tracks, mentor hours**) to maximize sponsor ROI and participant engagement, coordinating speaker logistics, agenda placement and marketing exposure

Jun. 2023 – Sept. 2023

Waterloo, ON

## PROJECTS

### Proteful 🧙 | React Native, Expo, TypeScript, Firebase

- **1<sup>st</sup> Place @ Hack404** — \$1,000 grand prize.
- Built a mobile safety app that crowdsources protest hazards to a live heatmap (photo, note, and radius pins), with background location, geofenced alerts, and timestamped incident trails to help attendees avoid danger in real time.
- Implemented **A\*-based** routing over an **offline road graph** to compute shortest-safe routes; context-aware proximity warnings, risk summaries, and safety tips, with on-the-fly re-routing as new hazards are reported.

### Multiplayer Snake Game 🧙 | JavaScript, Firebase

- Created online multiplayer Snake with real-time player sync and authentication on **Firebase Realtime Database**; achieved ~10 ms client–server latency via optimized WebSockets for up to **10** concurrent players.
- Designed collision detection and dynamic state management with client-side interpolation for smooth, consistent gameplay across devices, reducing jitter, masking packet loss, and improving fairness.
- Implemented a deterministic tick-based game loop with transaction-backed updates and strict **Firebase Security Rules**, preventing race conditions, enforcing room isolation, and supporting seamless client reconnects.

### Boxhead AR 🧙 | JavaScript, ml5.js, p5.js, Web Speech API

- Built a wearable AR headset MVP for Rhythm Hacks that runs entirely in the browser, using **ml5.js** (COCO-SSD) for low-latency, real-time object recognition (~85% accuracy) and **p5.js** to render scaled bounding-box overlays.
- Added a two-way voice interface via the **Web Speech API** (SpeechRecognition + SpeechSynthesis), enabling natural-language commands with ~90% recognition accuracy and real-time audio feedback.

### Chess Engine 🧙 | Java, Swing, JUnit

- Implemented legal move generation and validation for all pieces; enforced check and checkmate conditions with turn-aware game state; and built an event-driven **Swing** GUI with a clean separation between rules and rendering.
- Reduced code duplication by **over 60%** using a polymorphic, testable architecture validated with JUnit.

## TECHNICAL SKILLS

**Languages:** Python, JavaScript/TypeScript, C/C++, Java, C#, Bash, VHDL

**Frameworks & Tools:** React, Node.js, React Native, Expo, Unity, Firebase, Git, Valgrind, Next.js, Postman, Figma