

Dipendra Kharal

Graduate Backend and Systems Developer | Networking and Protocols | Reverse Engineering
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Summary

Computer Science graduate (AUT, Nov 2026) building backend and systems software in C# (.NET), Rust and TypeScript (Node.js). I like working at the protocol level: I've rebuilt a game's network client from its decompiled code and reverse engineered USB HID and DDC/CI protocols to port Windows-only software to Linux.

Education

Auckland University of Technology (AUT) | Auckland, New Zealand Feb 2023 – Nov 2026 (expected)
Bachelor of Computer and Information Sciences (BCIS), Software Development major

Technical Skills

- **Languages:** C#, Rust, TypeScript, JavaScript, C, C++, Python, Lua, Java, Swift, SQL, x86/x64 Assembly
- **Backend and systems:** .NET 10, Node.js, Express.js, REST APIs, network protocols (UDP, ENet, DTLS), binary serialisation, multithreading, Native AOT, systemd services
- **Reverse engineering:** Ghidra, Frida, ILSpy, protocol analysis, USB HID, DDC/CI (VESA MCCS) over I2C
- **Frameworks and tools:** Avalonia, Tauri, Godot, SwiftUI, Model Context Protocol (MCP), Discord API, Git, Linux (Arch Linux), Windows
- **Databases:** PostgreSQL, MySQL, SQLite

Projects

PNOPulse | C#, .NET 10, Avalonia, ENet, Lua, Python 2026

- Rebuilt a Godot 4 online game's network client from its decompiled code: an ENet 1.3 client over UDP, a DTLS-wrapped login, and byte-exact binary serialisation the server accepts as a genuine client
- Recovered 923 game maps (5.8 million tiles) with a Python pipeline, and added A* routing and a sandboxed Lua scripting host
- Backed it with 395 automated tests, including end-to-end runs against real Godot servers; ships as a single Native AOT executable for Linux and Windows

Monster Catcher MMO | TypeScript, Node.js, WebGPU, PostgreSQL 2025 – Present

- Built and run an online multiplayer game with 20+ active beta players: authoritative server, battle system, live state sync, and login and registration
- Added an admin dashboard with role-based access control (RBAC) and an in-house world editor that pushes content into the live game without a deployment

LConnect for Linux | C#, .NET 10, USB HID, systemd 2026

- Ported Lian Li's Windows-only L-Connect 3 to Linux: fan and pump curves, RGB lighting and a 480x480 LCD screen over USB HID, run by a systemd service
- Designed it to fail safe: if the service stops, the pump goes to full speed

AsusDisplay | Rust, Tauri, DDC/CI, I2C 2026

- Decompiled ASUS DisplayWidget Center with ILSpy, documented its DDC/CI over I2C protocol, and rebuilt it as a few-MB Rust app for Linux and Windows

OpenCord | TypeScript, Node.js, Discord API 2026

- Self-hosted control plane that runs local AI coding sessions from Discord, with approval buttons so destructive actions need a human decision

trello-mcp | TypeScript, Node.js, Model Context Protocol (MCP) 2026

- MCP server giving AI agents safe access to Trello through its REST API, with an archive-first design so an agent can't permanently delete a board

Security research Ongoing

- Found and privately reported security issues to companies and game developers; details available on request

Also: FireRed to Godot (C#, GBA ROM to Godot 4.3 export pipeline), NO PUFF (Swift, SwiftUI iOS app).

Work Experience

Assistant Manager | Burger King, Auckland, New Zealand Nov 2022 – 2025

- Ran daily store operations and shift scheduling, and handled customer escalations
- Trained and mentored new team members