

GABRIEL WINDLIN

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Education

University

Bachelor of Computer Science at ETHZ

Expected Graduation: June 2028

Zürich

- Courses: Algorithms and Data Structures, Linear Algebra, Discrete Mathematics, Introduction to Programming.

Experience

VIS ETHZ (Computer Science Association)

October 2025 – Present

Computer Infrastructure Team Member

Zürich

- Deployed Rally, an open-source collaborative scheduling tool, on the association's local cluster using Kubernetes.
- Configured container orchestration and networking to ensure reliable self-hosted services for the student body.
- Collaborated with the infrastructure team to maintain and monitor on-premise server resources.

PureGym

June 2025 – Present

Helper

Volketswil, Dübendorf

- Assisted with front desk tasks including check-ins, scheduling, and member support.
- Maintained a clean, safe gym environment and ensured equipment was in working order.

Skills Park

March 2022 – Present

All-rounder

Winterthur

- Welcomed customers and helped determine their needs.
- Maintained a balanced cash drawer, ensuring accurate accounting at the end of each shift.
- Collaborated with team members to optimize workflow efficiency.

Projects

TCP Port Scanner | Website | GitHub

C | POSIX Sockets | Non-blocking I/O

- Developed a high-performance, single-file TCP connect() scanner in C using non-blocking sockets and `select()` for precise per-port timeouts
- Implemented robust asynchronous connection logic with `EINPROGRESS` handling and `SO_ERROR` checks to accurately distinguish open, filtered, and closed ports
- Designed clean, minimal output (only reports open and timed-out ports) while achieving fast scans on large ranges without external dependencies

Converged Homelab Infrastructure

Docker | PostgreSQL | Caddy | Bash | Networking

- Designed and deployed a microservices infrastructure on a resource-constrained node (Ubuntu), utilizing `Docker Compose` for orchestration and `Caddy` for secure, automated HTTPS ingress
- Architected a shared-resource database pattern using centralized `PostgreSQL 16` and `Redis` clusters to optimize memory usage across multiple self-hosted applications
- Implemented `Split-Horizon DNS` via `AdGuard Home` and `Tailscale` for seamless local/remote access, secured with `CrowdSec` intrusion prevention and secrets management
- Engineered automated reliability workflows using `Bash` and `Cron` for nightly encrypted database dumps and volume snapshots with retention policies

SEC-SUITE: Security Testing Toolkit | Website | GitHub

Python | Multi-threading | Security

- Engineered comprehensive security toolkit with multiple password cracking techniques including `Markov Chain probabilistic generation`, `dictionary attacks`, and `multi-threaded brute force`
- Implemented modern hash algorithms (`bcrypt`, `scrypt`, `argon2`) with automatic type detection and salt handling
- Developed security utilities including `network port scanner`, `advanced keylogger`, and encoding/decoding tools with intuitive interactive CLI interface

Chat Application | Website | GitHub

C | TCP Sockets | Networking

- Implemented a single-connection TCP client-server chat application demonstrating socket programming fundamentals
- Enabled real-time messaging with simple command-line interface and graceful connection handling
- Utilized BSD socket API for creation, binding, listening, connecting, and data transfer

Screen Savor | *Website* | *GitHub***JavaScript** | **HTML** | **CSS** | **TMDB API**

- Created a movie discovery web app for browsing trending movies, searching, and viewing trailers and details
- Integrated TMDB API for real-time movie data including cast, synopsis, and release information
- Implemented responsive design with vanilla JavaScript for a unified user experience across platforms

Dotfiles Configuration | *Website* | *GitHub***Shell** | **Lua** | **Arch Linux** | **Hyprland**

- Maintained personal dotfiles for a minimal, keyboard-centric Arch Linux setup with Hyprland window manager
- Configured tools including Kitty terminal, Neovim editor, Zsh shell, and Waybar status bar with Pywal theming
- Developed installation script and custom keybindings for efficient workflow and system automation

Personal Portfolio | *Website* | *Github***Astro** | **Tailwind CSS** | **TypeScript** | **HTML**

- Developed responsive personal portfolio website showcasing projects and technical skills with modern UI/UX design principles and Neovim-inspired theme
- Implemented cross-browser compatibility and mobile-responsive design for optimal user experience across all devices
- Integrated dynamic CV loading from JSON for easy updates and high performance with SEO optimization

Technical Skills

Languages: Java, Python, C, JavaScript, TypeScript, HTML, CSS, YAML, Shell, Lua, SQL**Developer Tools:** Git, Docker, Kubernetes, Linux, PostgreSQL, Redis, Caddy, CrowdSec**Libraries/Frameworks:** Spring Boot, React, Jekyll, Astro, Tailwind CSS