

# Karam Matar

Karlskrona – Sweden

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Software Engineer specializing in algorithms, systems, and compiler design, with experience in large-scale software projects, secure infrastructure, and full-stack development.

## Education

### Blekinge Institute of Technology

*B.Sc. Software Engineering*

Karlskrona, Sweden

08/2023 – 06/2026 (expected)

*Relevant coursework:* Compiler Design, Operating Systems, Algorithms & Data Structures, Linear Algebra. With emphasis on low-level software understanding, performance considerations, and correctness in complex systems.

### Newcastle University

*Exchange Semester in Computer Science (Fall 2025)*

Newcastle upon Tyne, United Kingdom

09/2025 – 01/2026 (completed)

*Relevant coursework:* Computer Vision & AI, Algorithm Design and Analysis, Security Programming, Game Design.

## Professional Experience

### Softhouse

*Software Developer Intern*

Karlskrona, Sweden

Jan 2026 – Present

- Acting as communication responsible within a cross-functional development team of 10–11 full-stack developers, serving as the primary interface between the team, the customer, and the Head of Department.
- Ensuring that technical progress, decisions, and requirements are clearly communicated while working as part of a full-stack team with rotating roles and shared ownership of features.
- Participating in requirements analysis, implementation, and code reviews within an agile development process.

### Trafikverket

*Software Developer Intern*

Remote via Blekinge Institute of Technology

Jan 2025 – May 2025

- Worked as part of a small, full-stack development team of six developers on a security-focused CI/CD tooling project.
- Developed a reusable Azure DevOps pipeline task for detecting vulnerabilities and generating Software Bill of Materials (SBOM) files in JSON format across multiple repositories.
- Took initiative in team communication by keeping absent team members informed and actively following up to help resolve blockers during development.

### Blekinge Institute of Technology

*Teaching Assistant (C++ Course)*

Karlskrona, Sweden

Sep 2024 – Jan 2025

- Worked alongside other teaching assistants to mentor first-year students in C++ programming through labs and one-on-one sessions.
- Supported students in debugging and understanding core programming concepts, including pointers, memory management, object-oriented design, and common logical errors.
- Helped students reason about program behavior, correctness, and performance.

## Projects

**Compiler from Scratch (C++)**: End-to-end compiler including lexer, parser, semantic analysis, CFG-based IR, TAC generation, and a custom virtual machine.

**VulnerabilityChecker 2.0 (PowerShell, JavaScript, Azure DevOps)**: Designed and implemented an Azure DevOps pipeline task for detecting vulnerabilities in third-party dependencies across multiple repositories, parsing dependency manifests, querying vulnerability data, and generating Software Bill of Materials (SBOM) files in JSON format for CI/CD workflows.

**ShowcaseSERL (Next.js, React, TypeScript, Tailwind CSS)**: Built a full-stack web application for showcasing student and researcher projects with dynamic listings, detailed project views, and a kiosk mode, focusing on component-based architecture and clean separation between data handling and presentation.

**Death Marching Souls (C#, Unity)**: Developed a 3D action-platformer featuring player progression, enemy AI, boss encounters, and UI systems, implementing health management, experience-based leveling, and modular enemy behavior.

**GyaGame (Java)**: Developed a 2D semi-open-world shooter game in Java using a provided graphics library, focusing

on game logic, entity management, and player interaction.

**Space Invaders (C++, SFML):** Created a Space Invaders game in C++ using the SFML graphics library, implementing core game loops, collision detection, and rendering.

## Skills

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**Languages:** Arabic (Native), Swedish (Fluent), English (Fluent)

**Core Programming:** C++, Java, Python

**Web & Full-Stack:** TypeScript, JavaScript, React, Next.js, HTML, CSS/SCSS, Tailwind CSS, Svelte, SvelteKit

**Backend & Data:** Node.js, Express.js, MySQL

**Systems & Tooling:** Git, GitHub, CI/CD, Azure DevOps, Software Bill of Materials (SBOM)

**Game Development:** Unity, SFML

## Events and Achievements

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**Hackathon:** Hollytech Participated in a hackathon by Hollytech and won first place.