

# Rafael Hedman

## Game Programmer

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## Profile

Devoted to the fusion of visual, aural and narrative expression, attaining a transcendent meld for someone to experience the fantastic in. Childishly fascinated by infusing things with spirit using programming. Sense of beauty in shape and motion, word and image, chord and algorithm. My code has been likened to Japanese woodwork.

## Professional Experience

### Game Programmer, Rightsized Games, Stockholm

May 2022 – June 2024

- Worked on Undead Inc. from beginning to end. Resource management simulator published by Team17, released on Steam and Epic Games Store.
- Shouldered the map creation system, through concept, architecture, technical design, implementation, optimization and release.
- Engineered procedural generation of maps in Career Mode. Creating algorithms was principal. Became a powerful tool for designing biomes. Independent and autonomous execution.
- Also did camera controls, visual effects, post-processing, prototyping of policies and events.
- Very close collaboration with game designers and artists.

### Full-Stack Developer, ELK Studios, Stockholm

July 2020 – June 2021

- Created Game Changer, an administrative tool managing changes to games and critical components, generating reports, handling deployment and release.
- Minimal team of two programmers, doing everything from database architecture to business logic implementation and UI design.

### Game Client Developer, ELK Studios, Stockholm

August 2019 – June 2020

- Developed online slot games Cygnus, Micro Knights, Io and Nitropolis, from pre-production to release.
- Almost autonomously, 1-1.5 programmers in teams of around 5.
- Close collaboration with art directors, artists and animators.

### Developer, King, Stockholm

May 2018 – November 2018

- Worked on Candy Crush Friends Saga during the final stages before and through hard launch.
- Implemented tutorials, visual effects, blockers, A/B tests.
- Contact point for the audio team, caring for the game's music and sound effects.

### Developer, Modesty, Stockholm

April 2009 – May 2018

- Worked on Stardust, a 3D community with innovative visualizations of friends, contacts and interactions. Prototype for Vodafone R&D.
- Created Skrubben, a dollhouse-like playground on KPWebben. Design, art and implementation.
- Programmed on Avanza's first mobile app. Some graphic design.
- Music production and sound design for a children's game.

**Developer, AD&D, Stockholm**

September 2006 – April 2009

- Created games and experimental websites in award-winning internet campaigns for Diesel, Peak Performance, Fifth Avenue Shoe Repair, Resteröds, Avis, KICKS, Lantmännen, ZTV.
- Finalist, Innovative Advertising Awards, New York Festivals 2009
- FWA of the Day, 07 July 2008

**Developer, Starlet Deluxe, Stockholm**

February 2000 – May 2001

- Created games in award-winning internet campaigns for clients like Popwire, SBAB, Telia, Eniro, Posten, Dagens Industri.
- Bronze, Internet Rich Media Advertising, Clio Awards 2001
- Golden Egg, Internet Advertising, The Golden Egg Awards 2000

## Education

**Game Programming, PowerHouse, Kramfors**

August 2002 – June 2005

- Post-secondary vocational education and training, focused on game programming in C++.
- Extensive course in 3D rendering from the ground up, followed by studies of the DirectX APIs.
- Also touched game design, level design and other vital areas of game development.

**Physics, Stockholm University, Stockholm**

August 2001 – June 2002

- Intermediate: Mechanics, Thermodynamics, Electromagnetism, Optics, Wave Phenomena, Special Relativity Theory, Experimental Physics
- Basic: Waves-Quantum Physics

**Internet Programming, Capital School of Multimedia, Stockholm**

June 1999 – December 1999

- Vocational courses in multimedia and web programming.
- Single-handedly created a 3D procedurally animated game, manipulating polygons and lines; Space Invaders 2000. Starlet Deluxe offered me a job after seeing it at the course exhibition.

**Mathematics, Stockholm University, Stockholm**

August 1994 – June 1998

- First Degree Programme in Mathematics and Computer Science
- Specialized: Topology, Mathematical Analysis
- Advanced: Ordinary Differential Equations, Analytic Functions, Algebra, Logic
- Intermediate: Linear Analysis
- Basic: Mathematical Statistics, Programming Techniques and Applied Mathematical Analysis

## Skills

**Programming Languages:** C++, C#, Go, Python

**Game Engines & APIs:** Unreal Engine, Unity (DOTS), Fiction Factory, Defold, PhysX, DirectX, SDL

**Development Tools:** Git, Perforce, Subversion, Jenkins, Make, Jira, Confluence, Miro

**Software Design:** Data-Oriented Design (DOD), Entity Component System (ECS), Functional Programming (FP), Object-Oriented Programming (OOP)

**Code Quality:** Technical Design, SOLID Principles, Testable Code, Debugging

**Simulation & Procedural Systems:** Mathematics, Physics, Physical Animation, Procedural Animation, Procedural Generation, Procedural Meshes, Procedural Level Design

**Gameplay Design:** Innovation, Concept Development, Prototyping, Aesthetics, Game Feel, User Experience, Interaction Design, Player-Facing Systems, Iteration with Designers

**Creative Production:** Writing, Illustration, Music Production