Christian Sinding Nellemann

Personal Data

Date of Birth	Svendborg, March 15th 1983
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Qualifications

Skills

Java
C++
C#
Python
Unity
UnrealScript/UnrealEngine 3/UDK
PHP
XML/CSS/XSLT/XQuery
MySQL
OpenGL
SubVersion/TortoiseSVN
Object-oriented software architecture
3ds Max modeling
Machine learning
Data mining
Math and Physics at university level

Education

2008 – 2010 IT University of Copenhagen

M.Sc. IT

Media Technology and Games: Technology
Thesis: Developing an Agent for Dominion using Modern AI-Approaches
Supervisor: Georgios Yannakakis
Thesis Grade: 12 · Grade Average: 11.19[1]

The program focuses on real time applications, namely games. While I received an introduction to management and design methodology of the game industry pipeline, the main focus was on the technical side of things with both a lot of practical programming experience through collaborative projects and a theoretical insight in the fields of game engines and AI. My thesis was done in collaboration with a fellow student – we successfully made an AI for the game called Dominion using modern AI techniques such as neuroevolution and competitive co-evolution, as well as an actual digital implementation of the game. We have been encouraged to publish several papers on our findings.

1 Grades on Danish 7-step-scale – see Academic grading in Denmark – weighted by ECTS points from each course

2005 – 2008 University of Aarhus

B.Sc. Computer Science

Computer Science and Physics
Thesis Course: "Compilation"
Thesis Grade: 10 · Grade Average: 8.4

Completed all courses on time, with grades above average. Besides the standard Computer Science disciplines of programming, algorithms, computability, calculus, security and machine and software architecture, I took as different electives as distributed systems, numerical linear algebra and user interface software technology. I focused on a computer games direction by taking courses in computer graphics and game development, as well as the base first-year curriculum courses in the department of Physics - the latter were chosen to serve as the 30 ECTS outside one's department that are mandatory at Aarhus University.

2002 – 2004 Svendborg Gymnasium

High School

HF – Højere Forberedelseskursus · Grade Average: 10.4
Recieved scholarship ("Det Schrumske Mindelegat") for the highest grade average on the study line.

Related work experience

March 2011 - present Alexandra Institute A/S, Copenhagen

Research and Innovation Scientist, programming

Programming of various digital prototypes for innovation projects, which also involves partaking in user studies to some degree as well. Among other things, I have iteratively developed a user interface prototype for showing airport ground services complex information about winter conditions – the prototype was built in C# .NET, and was created in collaboration in-house anthropologists and the users. I currently develop prototypes for Android phones and tablets.

January 2011 IT University of Copenhagen

Research Assistant, programming

A short term one-month project doing programming on an augmented reality prototype, which was made in Unity (with programming in C#). It combined real-world toy tanks with virtual objectives using a new indoors tracking technology provided by an external company. Based on the work, the company agreed to fund an industrial Ph.D. – I would, however, much rather work in the game industry.

Spring 2010 IT University of Copenhagen

Teacher's Assistant, Efficient AI

Teacher's Assistant for the course Efficient AI. I received positive feedback in the following anonymous evaluation. Teaching has provided me experience in explaining difficult subjects to people coming from very different backgrounds, and has polished my abilities in classic AI techniques, such as path finding, optimization and decision making.

February 2008 – August 2008 Center for Interactive Spaces, Aarhus

Programmer

My job consisted mainly of doing both back- and frontend programming for novel Java ME (mobile) applications - one was used in Aarhus Festuge 2008, the other is used for teaching school kids biology (De Udvalgte). I gained experience in design, implementation and test of larger cross-technology software projects. I continued freelance work to complete my assignments for almost a year after moving to Copenhagen.

Related projects

Spring 2010 — Classifying Users of Last.fm

Data mining

Using the API of Last.fm we traversed the profiles of more than 10,000 users. We then performed principal component analysis and clustering on their musical tastes, based on the highly noisy data of music tags. The project provided me with interesting experience in data mining techniques.

Fall 2009 — The Joe Plumber Bot

Maching Learning

I used neuroevolution to evolve a UT2004 bot that could dodge rockets and other missiles. It was trained solely by letting it play against the bots included in the game. We used the Pogamut framework, which provided me with some insight in the problems one should take into consideration when choosing to use middleware.

Spring 2009 — The Witching Hour

Game programming

I worked with six other students on The Witching Hour, a multi player "first person haunter" mod for UT3 (UDK was not out yet). Together with one other programmer my job was the creation of the entire game logic. Along with other student created mods we won the $10,000 educational award in the Make Something Unreal Contest for our university, and the project has provided me with valuable experience in multi player game issues.

Fall 2008 — Minigolf game engine

Engine programming

I created a minigolf game using C++ and OpenGL. While not very flashy at all, it was one of the few that featured realistic physics. For optimal performance, a scene graph was created and traversed – by various modules implementing the visitor pattern – during physics calculations and rendering. Everything was very much a self-study.

Fall 2008 — Pot a Plant

Game programming

We made a tamagotchi-like game about caring for a plant on a team of six students. While not necessarily a great success gameplay-wise, the experience in using a Python driven engine (Panda3D) has been valuable. The game also featured some interesting procedurally generated plants.

Spring 2008 — Particle system

Graphics/engine programming

Along with two other students I created a particle system for visual effects in C++ and OpenGL. We were able to use arbitrary 3D polygons as emitters, and some fairly nice fire, snow, water and spark effects were achieved. Furthermore the program also featured camera on-the-fly keyframe interpolation using quaternions and slerp. It was a valuable experience in specific game-centric techniques, and was very largely a self-study.

Languages

English · Fluent
Danish · Mother Tongue
German · Basic