

# NIELS ALEXANDER NIJDAM

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## EXPERIENCE

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**University of Geneva, Institute of Services Science** November 2014 - Current 2016  
*Senior Researcher, Developer & Manager* Carouge, Switzerland

- Grant proposal writing (H2020 and AAL, the EU Framework Programme for Research and Innovation).
- Research and development of Human-Computer Interaction, Virtual Reality and Behaviour Analysis (*Java, C#, C++, Python*).
- Projects: CaMeLi ([cameli.eu](http://cameli.eu)), Miraculous Life ([miraculous-life.eu](http://miraculous-life.eu)), CogniWin ([cogniwin.eu](http://cogniwin.eu)), Animate ([animate-aal.eu](http://animate-aal.eu)) & Grow me Up ([growmeup.eu](http://growmeup.eu))
- 2D/3D scenario conceptualisation, logo designs, website maintenance (CasLab, I-Sec).

**ArtAnim** June 2014 - October 2014  
*Senior Researcher / Developer* Carouge, Switzerland

- Interactive VR application development using Unity3D for PC, Android and iOS.
- Development of back-end solution for in-editor Unity3D asset management and 3D mesh processing and customized texture map generation with for preservation of mesh details (*C++, C#*).
- Project: Taylormatic ([artanim.ch](http://artanim.ch), [taylormatic.com](http://taylormatic.com))

**University of Geneva, Institute of Services Science, MIRALab** January 2014 - May 2014  
*Senior Researcher / Post-doc* Carouge, Switzerland

- Grant proposal writing for H2020, the EU Framework Programme for Research and Innovation.
- Research and development of collaborative MRI segmentation and algorithms for real-time visualization of muscle deformation on a texture based approach.

**University of Geneva, Institute of Services Science, MIRALab** March 2008 - January 2014  
*Research Assistant* Carouge, Switzerland

- Research and development of avatar driven indoor guidance systems, 3D adaptive streaming solutions, collaborative systems with complex data and smart distributed services (*C++, C#, Java*).
- Grant proposal writing (H2020 and AAL, the EU Framework Programme for Research and Innovation).
- System Administrator, technical support for end-users and motion capture operator (Vicon MX system).
- Projects: Intermedia, 3DAnatomicalHuman, Leapfrog, SERVIVE. Details at [MiraLab.ch](http://MiraLab.ch)

**University of Twente, Human Media Interaction** August 2007 - January 2008  
*Software developer* Enschede, The Netherlands

- Design and development of a deferred shading 3D rendering engine and of a facial muscle system for 3D avatar expressions (*Java, OpenGL*).

**Philips CFT - Industrial Vision** February 2004 - June 2004  
*Software developer* Eindhoven, The Netherlands

- Design and development of a visual analysis and classification system for quality-control algorithms and real-time as well as non-real-time data visualization application (*LabView, C++*).

**Betagraphics B.V.** February 2001 - July 2001  
*Software developer* Hengelo, The Netherlands

- Development of modules for the ECM/SAP based customized content management system (CMS), database and interface programming on top of the CMS and providing inter-process communication between the CMS and third party software such as MS Office and Adobe applications (*VB, VBA, C#*).

## EDUCATION

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### PhD. in Computer Science

January 2014

*Institute of Services Science, MIRALab, University of Geneva*

*Carouge, Switzerland*

- *Emphasis:* “Context-Aware 3D Rendering for User-Centric Pervasive Collaborative Computing Environments” (thesis).
- *Research:* Remote adaptive 3D rendering, real-time media (3D) streaming to mobile devices, networking infrastructure analysis, service oriented design and deployment, augmented reality, dynamic device switching, collaborative enabling technologies on MRI Segmentation, fashion design and virtual try on.

### MSc. in Computer Science

August 2007

*University Department of Electrical Engineering, Mathematics and Computer Science, Human Media Interaction, University of Twente*

*Enschede, The Netherlands*

- *Emphasis:* “Facial animation and eye rendering” (thesis).  
Research and development of muscle based facial animations, extended shader enhancements for rendering facial features and deferred shading rendering pipeline engine.
- *Relevant Courses:* Speech and language processing, artificial intelligence, advanced graphics programming, XML technologies and Interaction design (rapid prototyping, tactile devices).
- *Research Projects:* Emotion to colour mapping (Emotion research, Interactive 3D user interface design) and Multi Agent System Environment (AI Agent construction, client/server real-time virtual environment, and emotion modelling).
- *Pre-Master courses:* Formal languages, Grammars & automata, Discrete mathematics, Logic, Vector and matrix calculations, Probability theory and statistics.

### BSc. of Information and Communication Technology

July 2004

*Saxion Hogeschool, University of Applied Sciences*

*Enschede, The Netherlands*

- *Emphasis:* “Visualize the past for the future - Graduation report about the development of the visual analysis and classification software.” (thesis).
- *Relevant Courses:* Information analysis, database systems, Java, C, C++, LabView, UML, Unix programming, compiler construction, algorithms & data structures, internet & web architectures, software engineering, design patterns, logical programming and functional programming.
- *Specializations:* Gaming & Simulation (OpenGL based C++ engine, collision detection & response, artificial intelligence, graphical particle systems). Middleware (web services, CORBA, Java RMI, J2EE, .NET, UDDI, load balancing).

## TECHNICAL STRENGTHS

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### Programming languages

C, C++, C#, Java, CUDA, GLSL, Cg, LabView, PHP, Javascript, Perl, Python, Lua, SQL.

### Libraries, APIs & engines

OpenGL, Direct3D, .Net, Qt, Boost, ITK, VTK, Java3D, CGAL, Eigen, Shapelib, Irrlicht, Ogre, OpenSceneGraph, SDL, Unity3D.

### Development tools

Visual Studio (2003-2015), KDevelop, XCode, Eclipse, IntelliJ, CMake, Maven, GNU Debugger, CVS, SVN, Git.

## LINGUISTICS

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*Dutch: Native*

*English: Fluent*

*German: Advanced*

*French: Elementary*