Mykola Konyk

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Computer Skills

- C++, C, Objective C.
- Erlang, Elixir, Haskell, Scheme and Lisp.
- Ruby, Python, Smalltalk, Lua.
- GPU Programming: OpenCL, NVIDIA Cg, GLSL, ARB/NV ASM, GLSL ES.
- Mac OS X OpenGL debugging and profiling, GLSL and ARB/NV ASM debugging, profiling and optimization.
- Libraries / Frameworks: boost, STL, Qt, MFC, Cocoa, Windows API
- Rendering Libraries / Frameworks: OpenGL, OpenGL ES, Direct3D 9 and HLSL (SM 3.0)
- Physics SDKs: NVIDIA PhysX, Bullet, Intel Havok
- DCC SDKs: Houdini Engine (HAPI), Houdini Development Kit (HDK), Houdini VEX (SOPs), Luxology Modo
- Engines: Unreal Engine 3, Unreal Engine 4
- Console SDKs, profiling and optimization: PS4, XboxOne, Nintendo Switch
- Version control: git, perforce, subversion
- Build systems: cmake, premake, ninja
- Interests: Game development, Unreal Engine, rendering, procedural generation, compiler construction, functional languages

Languages

English, Ukrainian

Education

- **Master of Computer Science, Carleton University, Ottawa, Ontario, Canada, 2011.**

  11 / 12 GPA.

  My thesis project was a collaboration between bioinformatics and computer science departments. I wrote a modular cell simulation framework (using C++ and Qt framework), which allowed students to create their own plugins in order to simulate biological cells at required level of granularity. An example plugin based on full 3D physics simulation (rigid body simulation using NVidia PhysX physics library) was also created.

- **Bachelor of Computer Science, Highest Honours, Carleton University, Ottawa, Ontario, Canada, 2008.**

- **Bachelor of Science in Mathematics (Statistics), National Taras Shevchenko University of Kyiv, Kyiv, Ukraine, June 2003.**

Publications

- **Chemical Knowledge for the Semantic Web, DILS 2008, Mykola Konyk, Alexander De Leon, Michel Dumontier**

Presentations

- **Technical Artist Bootcamp: Procedural Islands of 'Dauntless', GDC Vault Video,** Game Developers Conference 2018, Michael Trottier, Mykola Konyk

Work Experience

- **Phoenix Labs**, Vancouver, BC, Canada, Senior Programmer, May 2016 - Present.

  - Work on Dauntless
    - Unreal Engine 4, Houdini / Houdini Engine / Houdini HDK, work on procedural generation tools
      - GDC Vault Video and PDF presentation
    - Unreal editor tools (landscape, lod, painting, actor generation)
    - Work on various engine and gameplay systems
    - Work on Server, PS4 / XBoxOne / Nintendo Switch ports, rendering, profiling, performance and optimization

- **Side Effects Software, Inc.,** Toronto, ON, Canada, 3D Software Developer, April 2014 - May 2016.

  Side Effects Software Games group. One of R&D engineers responsible for maintaining and adding new features to Houdini and Houdini Engine and its integrations with various hosts.

  - Work on Houdini Engine
  - Original designer and implementer of Houdini Engine plugin for Unreal Engine 4, Source: GitHub
  - Work on internal build system (CMake, Mac OS X build)
  - Work on Houdini UV tools

- **TransGaming, Inc.,** Toronto, ON, Canada, Graphics Developer, April 2013 - April 2014.

  Graphics and Portability Group. Worked on TransGaming / NVIDIA Cider and TransGaming / Google SwiftShader technology. One of engineers responsible for maintaining and doing R&D work for graphics and shader translation layer in Cider (GL, D3D9, GLSL and NV/ARB ASM). OpenGL and shader debugging, profiling and optimization.

  - Work on TransGaming / NVIDIA Cider, Source: GitHub
  - Work on TransGaming / Google SwiftShader, Source: Google Source

  Participated in porting (and supporting existing ports) of following titles to Mac OS X:

  - Max Payne 3
  - Disney's Planes
  - Eve Online
  - The Sims 3 - Island Paradise
  - Nancy Drew: The Shattered Medallion
  - Nancy Drew: The Silent Spy
  - Star Trek Online
  - XCOM, The Bureau
  - Scourge: Outbreak
  - Metal Gear Rising: Revengeance

- **WayForward Technologies, Inc.,** Game Engine Programmer, September 2012 - March 2013.

  Worked on internal tools (models and materials). Worked on optimizing DXT texture compression tools for cartoon and hand drawn game art. Worked on porting existing PhysX engine physics system to Intel Havok and Bullet in WayForward's game engine.

  Contributed to:

- DuckTales: Remastered
- Double Dragon: Neon

- **Self Employed, Software Engineer, Ottawa, Ontario, Canada, January 2012 - August 2012.**

  Participated in several subcontract projects requested by a company specializing in green home heating solutions. Work involved developing mobile applications to control and monitor home heating systems (both IOS and Android). This work involved using Objective C and Java. Applications communicated with the heating controller via bluetooth and wifi ad-hoc protocols.

- **Exocortex Technologies, Inc., Ottawa, ON, Canada, Software Engineer, October 2011-December 2011.**

  Worked on in-house build system, source control and continuous integration system. Porting Windows products to Linux (Maya and Softimage plug-ins).

- **ITV Ltd., Kyiv, Ukraine, Programmer, September 2004 - May 2011, Concurrent with Education.**

  Participated in a number of contract jobs. Work involved developing and integrating in-house tools (using C, C++, boost, Qt framework, Ruby and several Ruby web frameworks).

  My work involved designing UI tools for configuration and report generation (both standalone application and web-based). Most of this work was done in parallel with my education (both undergraduate and graduate level). The company specializes in producing access control equipment (readers, access control panels) as well as software (for monitoring, configuration and report generation purposes).

- **United Nations Office on Drug and Crime, Kyiv, Ukraine, Head designer/programmer, June 2003 - December 2003.**

  'Evaluation of effectiveness of drug addiction rehabilitation programme in Ukraine' project, supported by United Nations Office on Drug and Crime, Kyiv, Ukraine.

  Responsible for system design and implementation of drug and alcohol addiction testing software. A distributed system (GUI Client and SQL based server application) was created. All programming was done in Visual C++ using MFC.

- **GSC Game World, Kyiv, Ukraine, Game Engine Programmer, 2002-2003.**

  Firestarter - First person shooter, tools, AI and core engine work.