Detailed resume at `https://github.com/mvaganov/self/blob/master/RESUME.md`

Michael Vaganov (`michael.vaganov@gmail.com`)

Computer Programmer and Educator.

Portfolio

`http://www.codegiraffe.com/portfolio` (diagrams & running code samples!)

Software Development Skills

- Multi-platform: Unity3D, C/C++, Java, proprietary cross-platform frameworks
- Client side: User Interface, multi-skew builds, device debugging
- Server side: client/server serialization, database, web tools
- Rapid Prototyping: Unity3D, Command-line, PowerPoint, Excel, Pen+Paper+Dice
- Graphics: 3D (Blender), 2D (GIMP, MSPaint), procedural (assets from code)
- Simulations: 2D and 3D math, real-time systems (single/multi threaded)
- Data Structures: custom implementations for cache/memory/stability
- Scripting: JavaScript, LUA, SQL, proprietary languages + compilers + VMs
- Command-line: cmd in Windows, terminal in Linux/Unix, batch/bash
- Source Control: Git, SVN
- Web Development: Node.js, Heroku, Apache Tomcat, proprietary systems
- Build systems: batch, Apache Ant, make
- Mobile: Old Mobile (J2ME, BREW) and New Mobile (Android, Unity3D)

Communication Skills

- English: public speaker, Polish: conversational, Mandarin Chinese: *yi dian dian*
- **10+ years as educator**: tutor and University Professor (taught age 7 to 40+)
- "Digital Native": stated using computers at age 10, programming C++ at age 14

Employment History

Employment Timeline

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2006  2007  2008  2009  2010  2011  2012  2013  2014  2015
Teaching @DeVry `ppppppppppppppFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFpppp`ppp------
Atlas/Infospace FFFFF`------`````-------``````------`````------`````------
LimeLife        `````FFFFFFFFFF````------``````------`````------`````------
Other Teaching  `````-------`````-------```````---ppp`pppp---ppppppppppp----
Impetus(stealth startup) ---`````------``````------````ppppppFppppppppppp----
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Key: (`p`) Part-time, (`F`) Full-time

Empoyment Details

Code Coach at theCoderSchool

September 2014 to present

Elite Computer Science education for youth (between age 7 and 17) in the Silicon Valley

Self Employed Programmer, Entrepreneur

December 2012 to present

- Stealth Startup, working on project codenamed "Impetus"

    - Game + Project Management Software using Unity3D and C#
    - 3D model generation system for data visualization
    - Scripting system for data storage, content generation, AI

- Developed Node.js server backend (using Heroku) for Mechamagizmo's "Hangries"
- Developed OOP courses for DeVry's national GSP program
- Developed high-level curriculum strategy for DeVry's national GSP program

Professor at DeVry University (Silicon Valley Campuses)

March 2006 to present

Professor of Games and Simulation Programming (GSP), a Computer-Science-like Bachelors of Science degree program, with emphasis on game development

- Rated highly in students evaluations (consistently 3.5+ out of 4)
- Managed 30+ Senior Project teams (16 week project, 2 to 5 programmers /team)
- Personal teaching style emphasizes:

    - Show them running code. Running Code Is Truth.
    - Leading by example (good code, honest testing, and honest communication)
    - Programming examples written in real-time, during class
    - Writing and testing working code from scratch, to show problem solving
    - Understanding the C/C++ memory model (basic Von Neumann Architecture)

- High-level programming philosophy (see end of Resume)
- Lab work as start-to-finish programming projects. They Must Write Code.
- Comparing academic and professional programming processes
- Agile and agile (small-a) development, favoring the small-a
- Joy-of-discovery and character-building-pain-of-debugging are important

Full list of DeVry courses taught at: https://github.com/mvaganov/self/blob/master/RESUME.md

Software Engineer at LimeLife

November 2006 to April 2008

Developer responsible for end-to-end network-aware mobile application development, including Lead roles on build system, reusable framework API, game development tools, porting systems, and automation systems

- Simplified manual 4-step build process for each device to a fully automated build process for an arbitrary list of devices, using Apache Ant scripts and simple batch files to start processes
- Created automated OTA (Over The Air) deck generation scripts as part of J2ME build process, using PHP
- Created DRM (Digital Rights Management) abstraction layer for carrier/platform specific DRM systems, as well as client-side code for a custom, encrypted, carrier non-specific, DRM layer for LimeLife
- Acted as emergency porting engineer for "InStyle" and "Rachel Ray: Recipes on the Run" mobile apps
- Created a highly efficient 2D composite sprite format and renderer for mobile devices (both J2ME and BREW)
- Created Java-based GUI tool for creating and editing composite sprites
- Acted as technical artist for "Top Chef: the Mobile Game", building composite sprites and animations
- Part of senior development team that built ALE, a (quite impressive) wide-porting/localization/multi-platform (multi-lingual) API, and associated build systems
- Implemented garbage collection system used by C++ applications that were automatically ported from Java
- Created AML, an HTML-like scripting language used to describe UI and network-aware UI traversal for phones
- Created build tools, runtime engine (including container-based UI system), and on-the-fly server-side Java-based compiler for AML, a custom UI engine for mobile

Full list of LimeLife shipped titles at: https://github.com/mvaganov/self/blob/master/RESUME.md

Software Engineer at Infospace Mobile Games

December 2004 to November 2006

Developer of mobile applications with emphasis on client/server interaction.

- Implemented and debugged multiple proprietary asynchronous Client/Server technologies.
- Trained engineers in proprietary BREW and J2ME technologies.
- Conceived and implemented original scriptable UI engines for mobile and created associated compilers.
- Developed zip-compression based networking/content distribution protocol.
- Designed, developed, maintained, and ported applications using "For Prizes" asynchronous multiplayer technology.
- "For Prizes" Expert - Acted as major knowledge store about proprietary For Prizes technology, including client/server transactions, and user registration and authentication processes, in both J2ME and BREW.
- Nominated for a company-wide Infostar award in the first 6 months of employment!

Porting Engineer at Atlas Mobile (later purchased by Infospace)

June 2004 to Dec 2004

Very productive first 6 months of professional software development work

- Ported 5 "For Prizes" games to CDMA carriers and 30+ BREW devices.
- Prototyped a functional BREW UI engine.
- Identified as a 'BREW expert' by technical management, 6 months after learning BREW.

Full list of Infospace Mobile / Atlas Mobile shipped titles at: https://github.com/mvaganov/self/blob/master/RESUME.md

CIS Tutor at DeVry University (Fremont Campus)

March 2002 to October 2004 CRLA certified, Tutor of the Semester (Summer 2003), Head Tutor (Fall 2004)

Education

Keller Graduate School of Management

September 2006 to 2010

Masters of Project Management

DeVry University

July 2001 to October 2004

BS of Computer Information Systems

Other

Volunteering Teaching

- Citizen Schools, Robert McNair Jr. High, (Oct. 2013)

    - Assisted a "Global Citizens" class, where students research world issues

- Coder Dojo Silicon Valley (Sep. 2013 to present)

    - Teaching Computer Science to kids 10+
    - Scratch, Python, Web Development, Unity3D

- Guest Lecturer, Makerere University, Kampala, Uganda (Oct. & Nov. 2012)

    - Professional Game Programming with C++
    - about 250 students (under-graduate and graduate)

- Guest Lecturer, Nkumba University, Entebbe, Uganda (Oct. & Nov. 2012)

    - Game Programming with Unity3D
    - 30+ students (high-school and under-graduate)

- Guest Lecturer, Victoria University, Kampala, Uganda (November 2012)

    - Introductory C++
    - about 20 students (under-graduate)

- Introductory Game Programming with C/C++ (late 2011, 2012)

    - Included a Unity3D tutorial
    - Neighborhood volunteer: 4 students (middle-school and adult), in late 2011
    - River of Life Church: about 20 students (middle-school) in mid-to-late 2012

Hobbies

- Rock climbing
- Volunteer Teaching
- Game Jams and Hackathons (sample works at `codegiraffe.com`)

Personal Programming Axioms

- The best programmer writes the most Readable code. Speed is for the compiler.
- The best code will survive long after a programmer leaves it.
- Single Point of Truth: One complexity, One bug, One change.
- Code explicit functionality rather than side effects, and /** document it */
- Comments are good, code that describes itself is better
- Think about optimization now, but do the actual optimization later.
- Just Prototype (and expect not to be given another shot at it).
- Program with a purpose: Understand the end-goal as soon as possible.
- Refactor sooner rather than later; clean code grows into powerful code.
- Disciplined, results oriented software development is always in style.
- How most production code should be judged (in order):

    - Functionality: intended results are produced (with constraints in mind)
    - Survivability: useable again elsewhere (maintainable/readable/modular)
    - Robustness: stability with a wide range of input (no bugs)
    - Resource Use: resources used conservatively (Big-O, memory, threads, ...)
    - Everything Else: elegance/robust-unit-tests/optimal-efficiency/...

- The Unix way feels right (`http://www.faqs.org/docs/artu/ch01s06.html`)

Other Credo

- Persistence (iteration) is disproportionately important to success.
- Rules are for people who don't know any better; Rules are important, but understanding sets you free.
- Luck is where Preparation meets Opportunity.
- To make the next best thing, the current best thing must be mundane.
- A spoonful of test dissolves a pound of design.
- Do not fear complexity, simplify.
- `http://codegiraffe.com/quotes.txt`