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V3.0, 9/2014

SUMMARY

Over 25 years programming and application development experience. Experienced in scientific programming, simulation, optimization, reverse engineering, mathematical modeling and market forecasting. The author of VX QuickMilling.

SKILLS

Languages

- **Proficient in** : C++, C, Pascal, Delphi.
- **Familiar with** : C#, VBA, Java, Python, AutoIt, Ruby, JavaScript.
- **Libraries used** : Boost, STL(Port), Loki, VTK, OSG, OpenGL, DirectX, CGAL.
- **Formats used** : XML, HTML, CSS, XSLT, DXF, STL, CL, GCode.

Software

- **Applications** : MS Dev Studio, MS Office, OpenOffice, GIMP, Photoshop, Illustrator.
- **Platforms** : Microsoft Windows all flavors. Some Linux (Ubuntu) exposure.

Mathematical apparatus developed

- Market analysis and forecasting.
- Simulations.
- Risk management.
- Optimizations (Artificial Neural Networks, Genetic Algorithms, LP, etc).
- Scientific, CAD, CAM, CAE.
- Signal processing (image, sound, video, point clouds, faceted reps, asset historical data, etc).

EXPERIENCE

Chief Scientist, **ModuleWorks**, Melbourne, FL, USA, 04/2012 – Present

Designing and implementing high performance components for reverse engineering, simulation and manufacturing.

Chief Scientist, **ZW Soft**, Melbourne, FL, USA, 09/2010 - 04/2012

Looking after all aspects of Quick Milling our flagship optimized and adaptive toolpath generator presented in previous roles at VX.

Component Technology Director, VX Corp., Melbourne, FL, USA, 09/2004 – 09/2010

Looking after all technical aspects of **VX QuickMilling** our flagship optimized and adaptive toolpath generator presented in previous roles. This is largely a technical hands-on position.

A presentation done by the author around 2005 can be found here: <http://www.vx.com/quickmill.cfm>

Lead Software Engineer, VX Corp., Melbourne, FL, USA, 04/2001 – 09/2004

Architect, designer, programmer, training for **VX QuickMilling** (arguably) the most advanced tool path generator for mold and die machining. Continuing to push the boundaries of optimal manufacturing started over 10 years ago, involving complex optimizations, simulations and robust algorithms.

Pioneered many new techniques in manufacturing like:

- *AFC* - adaptive feed control speeding up milling by 25-40%.
- *QuickView* - at a glance viewing of various behavioral aspects.
- *SmoothFlow* - a constant loading continue path for HSM (High Speed Machining).
- *Continue stock simulation* - for accurate linking, holder and out of flute collision.
- *Self reflection* and *Self API* - writing in XML, C++ or C# for automatic embedding in host apps.
- *Multithreaded caching* - increasing the computing speed over 300% using cascading hashing.
- *Generalized IO in XML*.

Principle Analyst Programmer, Pathtrace, Reading, Berkshire, UK, 07/1999 – 04/2001

More emphasis on software architecture and design and a continuation of previous work.

Senior Analyst Programmer, Pathtrace, Reading, Berkshire, UK, 04/1997 – 07/1999

Developed software for computer aided manufacturing in the mold and die manufacturing area using C++ and STLPort. The work was focused in following directions:

- *Hierarchical caching* - scalable ways of reusing previously done computation.
- *Robust feature aware adaptive tool paths* - can automatically change according with new features.
- *Gauge free milling*.
- *Minimizing tool breakage*.

President and Founder, BillaSoft, Timisoara, Timis, Romania, 09/1991 – 03/1997

Founded **BillaSoft** specialized in developing and selling CAD, CAM, Simulation and Post processing solutions to the manufacturing sector. The software suite developed was called **TechnoPack** (*TechnoCAD, TechnoPack and GNCPP – a numeric post processor*). The programs were decent in functionality and were used as the testbed for author's PhD thesis too. **Pathtrace** got interested about the technologies pioneered here and invited the author to continue his work/research in UK.

EDUCATION

Universitatea 'Politehnica', Timisoara, Timis, Romania, 06/1992 – 10/1998

PhD, area of study: *Math, Programming, Optimizations, Manufacturing, Mechatronics*.

Universitatea 'Politehnica',

Timisoara, Timis, Romania, 09/1986 – 06/1991

Diplomat Engineer, area of study: *Math, Design, Programming, Mechatronics, Manufacturing.*

HOBBIES

Strategies and simulations games: *Go, Bridge, Poker, Civilization, etc* many titles here.

Market forecasting, risk management, investing systems developer.

Some interesting results in this area of research (studied since 2006) using **Excel, C++** and **Portfolio123** platform.

More information:

I maintain an over 99.5% at CAPS: <http://caps.fool.com/player/billator.aspx>

I develop trading systems at P123: <http://www.surfr.dmicsa.com/>