

## Contact

[www.linkedin.com/in/alexpakhunov](http://www.linkedin.com/in/alexpakhunov)  
(LinkedIn)  
[blog.not-a-kernel-guy.com](http://blog.not-a-kernel-guy.com) (Blog)

## Top Skills

Debugging  
Device Drivers  
Multithreading

## Languages

English (Native or Bilingual)

## Patents

Providing Network Capability Over A  
Converged Interconnect Fabric  
Message Passing In A Cluster-On-  
Chip Computing Environment  
Remote desktop video streaming  
alpha-channel  
Providing hints while entering  
protected information  
Cloud computing and integrated  
cloud drive

# Alex Pakhunov

Principal Software Engineer, Flight Software at Space Exploration  
Technologies  
Torrance

## Summary

My blog: <https://blog.not-a-kernel-guy.com>

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## Experience

Space Exploration Technologies  
Principal Software Engineer, Flight Software  
October 2013 - Present (7 years 8 months)  
Hawthorne, CA

I design, implement, and support the flight software for Falcon 9, Falcon Heavy, and Starship vehicles.

### Google

Senior Software Engineer  
January 2012 - October 2013 (1 year 10 months)  
Kirkland, WA

- Enabled the host component of Chrome Remote Desktop on Windows and launched it along with Chrome OS launch in May 2012.
- Designed and implemented the OS integration service, implemented configuration and on-demand installation of the host via the web app; integrated the host with the auto-update and crash dump reporting services.
- Analysed the host security model and reduced the attack surface by running the bulk of the host components with low privileges.
- Analysed and prototyped the most efficient ways of recording the screen on Windows.
- Prototyped integration with RDP services.

eXtreme Computing Group, Microsoft Research  
5 years 7 months

Senior SDE  
November 2009 - January 2012 (2 years 3 months)  
Redmond, WA

- Ported a multi-kernel OS (based on Singularity) to run on the experimental 48-core Intel Single-Chip Cloud Computer (SCC) processor.

- Designed and prototyped UEFI target debugging support for WinDbg providing full source-level debugging experience of BIOS and OS loader code.
- Modified Windows HAL to run on unsupported ARM hardware.
- Implemented Gigabit Ethernet NIC driver supporting TCP/UDP checksum offloading, interrupt moderation, and Jumbo frames.
- Ported a production quality workload (millions lines of code) to run on a reduced version of Windows.
  
- Prototyped an x86 compatibility subsystem for Windows on ARM based on x86-to-ARM just-in-time (JIT) emulator. Got x86 Notepad running on Windows on ARM.
  
- Led the project aimed at enabling IP networking on top of Intel Thunderbolt optical interconnect.

#### Senior SDE

July 2006 - November 2009 (3 years 5 months)

- Maintained Windows-on-Windows 64bit (Wow64) subsystem during Windows 7 release cycle.
- Designed and implemented support of new XSAVE/XRSTOR processor instructions in Windows 7.

#### Microsoft Business Solutions

Software Development Engineer

October 2004 - June 2006 (1 year 9 months)

- Worked on X++ compiler and interpreter in Dynamics AX 4.0.
- Implemented the "Record ID extension" feature solving the problem of exhausting available record identifiers on large Dynamic AX installations.

#### Rocket Division Software

Software Developer

November 2003 - August 2004 (10 months)

Ukraine

- Designed and implemented a high-performance iSCSI target (StarWind) enabling remote access to SCSI and IDE devices including CD and DVD burners, hard drives, tape devices and scanners over the network.

#### Mirasoft Ltd.

Sr. Software Developer

September 2002 - March 2004 (1 year 7 months)

## Ukraine

- Designed and prototyped GUI tools for defining business objects and mapping them to a relational database. The produced XSD definitions and XSLT mappings were directly used by XML-based database interface library to retrieve, store and validate business data.
- Prototyped a Visual Studio extension for parsing C++ code and feeding Class View and Object Browser with extracted symbol information.

## SC Richard Consulting SRL, Affiliate of WebSci Technologies

Software Developer

September 2001 - September 2002 (1 year 1 month)

## Romania

- Ported parts of “Ensiva” web publishing system source code to Windows NT platform.
- Implemented True Type fonts support in the PDF generation module.

## Electronic Systems

Software Developer

August 2000 - September 2001 (1 year 2 months)

- Implemented DSS-1 signaling protocol (based on “isd4bsd” module) for “Vesna” digital phone station.
- Prototyped two lowest layers of Message Transfer Part protocol (MTP, a part of SS7 protocol stack).

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## Education

Khmelnitsky National University

M.S., Computer Systems · (1995 - 2000)