# Anatoliy Bilenko

## *CONTACTS*


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- linkedin
- Location: Europe


## *BACKGROUND*

- Linux systems programmer with some experience in Linux kernel;
- Leading and mentoring people;
- Fluent in C/C++, assembly, bash, python, Go;
- Distributed systems;
- Telecommunications and protocols;
- Discrete event simulation;
- Solution-wide performance debugging;
- Statistics, Data mining, Machine Learning, Computer vision, DSP;
- Open source contributor.

## *FreedomFI/Nova-Labs – LEAD SWE, ARCHITECT*

### *2022-now*

https://github.com/magma/

Lead development of Wi-Fi offload solution. Involved into develpement of telecom core frameworks such as magma designed for enabling experienced users to run own mini-telecom operator.

Software product design, including requirements gathering, use-case definition, milestone planning, and integration. Communication of technical decisions, development plans to software developers, product management.

- Wi-Fi offload team lead;
- Designed and implemented smoothless LTE to Wi-Fi offloading;
- Designed and implemented security workflow for Wi-Fi hotspots, including implementation of TrustZone kernel module and trustlet, openssl RSA engine;
- Prototyped inbound roaming feature.

Technologies: EAP-AKA, EAP-TLS, Passpoint 2.0, Radius, Radsec, Diameter, M-TLS, Wi-Fi, sWX, S8, S5, S11, Gx, Gy, OpenWiFi TIP, Radiator, Radsecoroxy, OpenWRT, TrustZone, openssl, Open vSwitch, OpenFlow, AWS, docker, k8s, HashiCorp vault (CA), YateHSS, C, C++, Go, python.

# *SEAGATE/XYRATEX – LEAD SWE, ARCHITECT*

## *2011-2022*

Distributed object store. Remote work, globally distributed team.

https://github.com/Seagate/cortx-motr

Involved into develpement of distributed object storage system designed for great efficiency, massive capacity, and high HDD-utilization.

Technologies: C, asm, python, bash, various cluster hardware, network and storage controllers such as Mellanox Connectx-5, Seagate Exos X 5U84, Supermicro TR4, PCI busses, HBAs, simd.

- 2020 - 2022: Distributed transaction management team lead (4 engineers);
- 2019 - 2020: Performance team lead (8-15 engineers);
- 2018 - 2022: A part of architectural group. Software product design, including requirements gathering, use-case definition, milestone planning, and integration with complementary subsystems. Communication of technical decisions, development plans to software developers, team leads, product management.
- RAID NxPxK library design and implementation;
- Distributed configuration component implementation;
- Preemptive locking primitive design and implementation;

- "Parity-math" component as a part of SNS-repair (from HLD to TESTING);
- HLD and DLD development of "rpc-layer" component;
- Misc. tasks from CODE to TESTING like lib improvement, etc;
- Transaction engine component design and implementation;
- Designed implementation plan for the transaction engine integration (overall work was around ~5k hours);
- Designed and implemented btree persistent structure;
- Designed approaches (based on existing but with significant project specifics) allowing to increase parallelism level for storage structures of transaction engine;
- Performance tuning and optimization in different contexts: from application to system-wide;
- Page Daemon design and implementation;
- Designed implementation plan for the Page Daemon component integration (an alternative was to rewrite the whole project code base);
- Distributed transaction manager detailed level design (high level design was proposed by the architect);
- Different kinds of library algorithms and improvements mostly related to parallel and asynchronous programming (ex: parallel_for() implementation, async termination implementation, etc);
- Different kinds of scientific work like system performance modeling (queuing theory);
- Designed and implemented distributed profiler;
- Designed and lead implementation of the cluster-wide performance harness (telemetry).
- Data/metadata corruption debugging in distributed system.

## *VIEWDLE, Kiev – SENIOR SWE (CV/DSP)*

### *2009-2011*

Face detection and recognition engine. VIEWDLE was bought by Google/Motorola Mobility.

Technologies: C++, matlab, opencl, opencv, intel tbb, sse, neon, linux.

## *LUXOFT, Odessa – SENIOR EMBEDDED ENGINEER*

### *2007-2009*

Emergency Call controller.

Technologies: C++, RTOS, VME, QNX.

## *LUXOFT, Odessa – SWE*

### *2006-2007*

Graphical rasterizer library.

Technologies: C++, RTOS, VME, QNX.

# *HARDWARE PROJECTS*

## *2002-2006*

- This part of CV does not include precise and full list of completed projects;
- Hardware-related experience mostly in airspace and telecommunication;
- Software and hardware for sensors and actuators, digital engine control systems, telemetry systems in airspace domain.

- Software and hardware components for telephone station switch.

  Technologies: AVR, LPC2100, ATSAM4LC4C, MPC555, Altera Cyclone IV EP4CE6, Xilinx Spartan 3E XC3S500E, PCB manufacturing.

# *PUBLICATIONS*

- US PATENT · US390999147 · ANOMALY DETECTION IN STORAGE SYSTEMS · Issued Feb 2, 2023;
- US PATENT · US11442715B1 · ASYNCHRONOUS FRAMEWORK · Issued Sep 13, 2022;
- PUBLICATION · GRAPH PARTITIONING METHODS FOR COMPUTATIONS IN RECONFIGURABLE SYSTEMS · Issued 2012;
- For full list of publications follow to Google Scholar or PhD thesis annotation.

## *EDUCATION*

- Odessa National Polytechnic University, 2001 - 2007, Master of Science in EECS. GPA: 98/100. Thesis: "Classification of wavelet functions";
- Odessa National Polytechnic University, 2008 - 2013, PhD in EECS. Thesis: "Methods of performance increase in reconfigurable computing systems by means of new algorithmic and structural organization".

## *COMMUNITY*

- Seagate | Meet the Architect – CORTX Observability with Anatoily Bilenko;
- Seagate | Meet the Architect – CORTX DTM: Resiliency in Distributed Systems;
- Provided lectures on "Processor design" and "Compiler design" read in Odessa National Polytechnic University, 2009-2015, 2021-2023. My role: volunteer, leader, organizer.