Name: Alexey A. Sheplyakov
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Date of birth: 19 April, 1978
Place of birth: Kharkov region, USSR
Nationality: Russian Federation
Sex: male
Languages: English (fluent), Russian (mother tongue), Ukrainian (mother tongue)

Education

- October 2001 – October 2004: postgraduate student at University Center of Joint Institute for Nuclear Research
- September 1995 – March 2001: graduate student at Department of Physics and Technology of V.N. Karazin Kharkov National University

Work experience

- **October 2019 – now:** C developer at BaseALT
  Responsibilities:
  - Porting Linux (kernel) to various ARM and MIPS SoCs
  - Debugging and fixing issues in vendor drivers and firmware
- **November 2018 – September 2019:** performance analyst at EPAM
  Performance analysis and improvement of "low latency" code (software for capital markets). Responsibilities:
  - Designing benchmark scenarios based on real world products usage
  - Choosing relevant metrics and visualization
  - Writing load generators and other test applications, automating benchmarks
  - Identifying bottlenecks, improving the architecture and implementation
  - Tuning the OS (Linux) for low latency/soft real time applications

  Projects:
  - FIXEdge, application server providing FIX (Financial Information eXchange) gateway to multiple protocols (various message queues, REST, etc).
    Technologies: C++11, Berkeley sockets, boost, Python, ansible, CMake
- **May 2018 – November 2018:** C developer at BaseALT
  Responsibilities:
  - Debugging, fixing, and improving Linux' client side AD (Active Directory) integration software, such as SSSD
  - Automation of Samba based Active Directory domains deployment
- **August 2017 – May 2018:** performance analyst at EPAM

- **August 2013 – July 2017:** C++/C/Python developer at Mirantis, Inc.
  Projects:
  - Ceph, a distributed object storage, block device, and a POSIX filesystem.
    Responsibilities:
    - Debugging and bugfixing (examples: ceph bug #14428, ceph bug #12065, ceph bug #14512)
    - Troubleshooting production Ceph clusters
    - Planning and deployment of Ceph clusters according to clients' workload and requirements

    Technologies: C++11, boost, Python, ansible
  - Mirantis OpenStack
    Responsibilities:
    - Debugging and fixing race conditions, data corruption, hardware specific, and other "interesting" bugs (commits)
    - Adjusting OpenStack components according to customers' requirements
    - Reviewing the code

    Technologies: Python, puppet, POSIX shell, ruby, GNU make
- **November 2012 – August 2013**: C developer at ADB Ukraine
  Project: Epicentro Platform, CPE (home router) firmware based on embedded Linux.
  Responsibilities:
  - Implementation of user space IPv6 related components (DHCPv6 server and client)
  - Bug fixing (mostly the userspace code)

  Technologies: C, Berkeley sockets, Linux, IPv6
- **April 2011 – November 2012**: C++ team lead at P-Product, Inc. Projects:
  - CEVA profiler, DSP (digital signal processor) profiler based on a simulator of the target architecture, a part of CEVA IDE
    Responsibilities:
    - Design and implementation of raw performance samples processing
    - Representation of the performance data in the GUI

    Technologies: C++, Qt4 (in particular GraphicsScene framework), boost, SQLite
  - XMPie uRender, video personalization solution. Responsibilities:

    * Design and implementation of H264 video streams stitching algorithm (the key feature of the program)
    * Design and implementation of the GUI
    * Solving portability issues (the product runs on Mac OS X, Linux, and Windows)

  Technologies: libavcodec, Qt4
- **October 2010 – April 2011:** software engineer at Helicon Soft Ltd.
  Project: Helicon Remote 2.0, a program for semi-atomatic focus and exposure bracketing.
  Responsibilities:
  - Writing device (photo camera) communication code for Mac OS X and Linux
  - Design and implementation of GUI
  - Reverse engineering undocumented cameras' commands
  - Troubleshooting Mac OS X specific issues

  Technologies: libusb, libptp, Canon SDK, Qt4
- **February 2010 – July 2010:** software engineer at Quickoffice, Inc
  Project: Qt4 port of Quickoffice mobile office suite
  Responsibilities:
  - Rewriting Symbian specific code the Qt4 way
  - Debugging and fixing obscure bugs (like "widget gets mispositioned after rotating the phone 3 times in a row")
- **November 2008 – January 2010:** software developer at Metalika Publishing House
  Project: *Opus Metalicus* – the program which powers the "Metallicheskiy Vestnik" magazine.
  Responsibilities:
  - Design and implementation of the database schema, triggers, views
  - Design and implementation of the GUI
  - Deployment, administration, and support of the software

  Technologies: Qt4, PostgreSQL
- **November 2004 – November 2008:** research fellow at Bogoliubov Laboratory of Theoretical Physics.
  Supervisor: professor D.I. Kazakov

  Research topics
  - Phenomenology of the Standard Model of elementary particles and its minimal supersymmetric extension
  - Application of computer algebra to calculations in perturbative quantum field theory, in particular computation of Feynman integrals with several mass scales

  Publications
  - A. Bednyakov, D.I. Kazakov, A. Sheplyakov, "On the 2-loop $\mathcal{O}(\alpha_s^2)$ corrections to the pole mass of the t quark in the MSSM." Physics of Atomic Nuclei, 71:343-350,2008. (preprint: hep-ph/0507139)
  - M.Yu. Kalmykov and A. Sheplyakov, "lsjk – a C++ library for arbitrary-precision numeric evaluation of the generalized log-sine functions." Comput.Phys.Commun. 172 (2005) 45-59. (preprint: hep-ph/0411100)
  - A. Bednyakov and A. Sheplyakov, "Two-loop $\mathcal{O}(\alpha_s y^2)$ and $\mathcal{O}(y^4)$ MSSM corrections to the pole mass of the b-quark." Physics Letters B, 604:91-97,2004. (preprint: hep-ph/0410128)

  Talks
  - The 15th International Conference on Supersymmetry and the Unification of Fundamental Interactions (SUSY07), Karlsruhe, Germany, July 26 - August 1, 2007
    Subject: ffmssmsc – a C++ library for superpartner mass calculation and renormalization group analysis of the MSSM (slides)
  - International school-workshop "Calculations for modern and future colliders" (CALC-2006), Dubna, Russia, July 15-25, 2006
    Subject: Different two-loop correction to the mass of heavy quarks in the MSSM (slides)

Programming languages
- Primary (being used in everyday work): C++, C, Python, Bourne shell, SQL
- Others (used only occasionally): Assembler (x86), ruby, Scheme (mostly guile)

Operating systems: Linux (primary OS since Oct. 1996), Mac OS X

Degrees M.Sc., March 2001
Supervisor: assistant professor V.G. Zima
Diploma thesis title: BFV-BRST quantization of free massless arbitrary spin particle.

Hobbies
- Phenomenology the Standard Model and its supersymmetric extensions.
- Calculation of Feynman integrals with several mass scales.
- Application of computer algebra to calculations in perturbative quantum field theory.
- Non-perturbative quantum field theory.
- GiNaC, a special purpose C++ library for symbolic computations.