

THOMAS APRELEV

C/C++ SOFTWARE ENGINEER

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PROFICIENCY

- Wrote code in C (fluent), C++ (rusty) and Python.
- Built code with CMake, Make, and MSBuild.
- Compiled code with MSVC, GCC, and Clang.
- Tested code with Google's googlemock and benchmark.

EDUCATION

2010 – 2016 BS & MS in Computer Security at [BMSTU](#)

- Graduated with honours and perfect GPA.
- Majored in Cryptography and Applied Mathematics.
- Had degree verified and evaluated by WES, #4045139.

EXPERIENCE

2015 – 2019 Full-time Software Engineer at [Infotecs JSC](#)

- Reengineered the back-end implementation of both national and international cryptographic mechanisms:
 - symmetric: block ciphers, modes of operations, MACs;
 - asymmetric: elliptic curves, digital signatures, key exchanges, encryption schemes;
 - auxiliary: hash functions, HMACs, KDFs, PRFs, PRNGs, key wrapping algorithms.
- Tripled performance of some primitives by utilising SIMD instructions sets and hand-written assembly for critical code; doubled performance of other primitives by introducing LUT tables and algorithmic optimisations.
- Applied SOLID principles to develop readable, maintainable and scalable code:
 - introduced abstract interfaces for aforementioned mechanisms,
 - enclosed implementation specifics within private APIs.
- Enabled support for wide range of compilers and operating systems.
- Implemented sanity, integration, regression, and performance tests: achieved 98% coverage in over 6000 tests.
- Established flexible CI & CD cross-building chains with reproducible dependencies resolution.

MISCELLANEOUS

- Developed [contest](#), one-of-a-kind framework for data-driven testing.
- Added [run-time tests skipping](#) to [googletest](#).
- Fixed [multiple bugs](#) in [Apache Ivy](#).