

Software Engineering 15+ years, Applied Math, Self-Study ML / AI Safety

SKILLS

- ML: Python, PyTorch, NumPy, pandas.
- SE: C#, Python, JavaScript, bash, PowerShell, HTML/CSS/XML, C.
- DB / Cloud: SQL Server, SQLite, other; Azure.
- Algorithms & data structures. Design. Testing (unit / integrated / UI tests, TDD, mocks, other).

EMPLOYMENT

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| Senior Developer | ProWritingAid | June 2020 - Dec 2022 |
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- Built an images generation service for weekly emails increasing active subscribers by 146% in 6 months, 40-50GB in 2-4hrs. Docker, Node.js, Express.js, C#, .NET TPL, Azure App Service, Azure SQL, Azure Storage.
- Implemented handling of IN rupee currency in the payment subsystem. Used in 1.8-2% of payments.
- Decreased running time for automatic tests by 30-40% with 0.23-1.8hrs saved each day.
- Maintenance of ETL jobs: 10-15 performance and reliability issues solved (out of memory, timeouts, concurrency, etc.).
- Implemented affiliate referrals program (details under NDA).

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| Senior Developer | Gameo (Switzerland) (Remote) | July 2011 - Aug 2018 |
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GameoEmergency 3, Fall 2013 - Aug 2018. A system for emergency situations monitoring.

- Implemented ~200 scenarios using C# and SQL that lead to doubling the number of users within 2 years, new contracts for another 10K users and winning the SFR award in 2017.
- Reduced response time from 1s to 20ms for API messages by developing async processing using Azure WebJobs and a message queue.
- Assembled Continuous Integration and Delivery using TFS, Azure RM, MSBuild, PowerShell and Python with ~400 unit tests (xUnit, Moq), 18 acceptance and integration tests (Selenium, SpecFlow) that resulted in reducing manual work time from 1h to 10min for each deployment.

GameoEmergency 2, July 2011 - Fall 2016:

- Developed a live dashboard using C# and SQL to analyze usage of the system by 1500 users.
- Resolved 124 issues: new features, bug fixing and system administration.
- Automated deployment using CruiseControl.NET and MSBuild reducing 8hrs of manual work to 1h.

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| Senior Developer | The Federal Treasury (Russia) (Remote) | July-Aug 2014 |
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Rapidly developed a document management system from scratch with 32 pages and reports, 13K LoC, 225 classes, 62 unit tests using C#, SQL, JavaScript, HTML and CSS.

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| Senior Developer | Plant Taxonomy Web (USA) (Remote) | Jan 2012 - Oct 2013 |
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Built a prototype for a wiki with a graph (taxonomy) for ~15K species using C#, JavaScript, HTML and CSS.

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| Senior Developer | Ncube, Inc. (USA) (Remote) | Falls 2012 - 2013 |
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Developed a tool for localization of ASP.NET apps using C#, CoffeeScript, PowerShell, WinService and RavenDb.

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| Senior Developer | Devacon (Germany) (Remote) | Falls 2010 - 2011 |
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Built a reporting tool for hospitals from scratch using VB.NET, HTML, CSS and VB6.

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| Developer | Reksoft (Saint-Petersburg, Russia) | Summers 2006 - 2010 |
| <ul style="list-style-type: none"> • Citibank, Russia, 2009-10. ERP - Built several components using C# and WinForms for a currency control unit. • Francotyp-Postalia, 2008. Franking machine cliché editor - Developed an object model and UI (C# and WPF). • If P&C Insurance, 2006-07. CRM - Built an insurance calculator using JavaScript. Implemented two insurance modules using C#. | | |

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| Developer | Amur Jewelry Factory (Khabarovsk, Russia) | Summers 2005 - 2006 |
| <ul style="list-style-type: none"> • Built Windows and Web apps with a jewelry catalog using VB.NET. Automated business processes using VBA. | | |

EDUCATION

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| | Online courses and self-paced study | 2005 - present |
| <ul style="list-style-type: none"> • ML Safety Scholars: courses in ML, DL, ML Safety (Summer, 2022). • Discrete Math (stepik.org, SPb Academic Uni.) (2016). Algorithms: Data Structures (2016) (Python). Programming C++ (2016). Operating systems (2016). Intro to Python (2016). Calculus I (2017). Algorithms: Methods (2017). Introduction to Linux (2019). Linear algebra (2019-2020). Calculus II (2020). Probability theory (2020). Machine Learning (coursera.org, Stanford) (2019) (Octave). System Design Primer (2018-19). Algorithms, part I, II (coursera.org, Princeton Uni.) (2015-17) (Java). Current (unfinished): UMich Deep Learning for Computer Vision, Practical Deep Learning, AI Alignment Curriculum, Deep Learning Curriculum • Mastering algorithms and data structures. Solved +1000 problems using C, Python, C#, F#, other. | | |

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| Khabarovsk, Russia | Far Eastern State Transport Uni. | 2000 – 2005 |
| <ul style="list-style-type: none"> • B.S. in Applied Mathematics. Institute of Natural Sciences. May 2005. GPA: 3.86 / 4.0. • Specialist degree: Translator in the Sphere of Professional Communication. May 2004. GPA: 3.6 / 4.0. | | |

PROJECTS

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| | Pet projects and contributions |
| <ul style="list-style-type: none"> • ML Safety Scholars. Safe MNIST Classifier project (Summer, 2022): calibration, adversarial robustness, anomaly detection. PyTorch, NumPy, pandas. https://github.com/artkpv/safe_mnist_classifier • Plain text accounting system for my finances (2016-present). HLedger, Python (pandas), bash, csvkit. • Information retrieval system (a web search tool) and a web crawler (2020-2021). C#.NET. • Dinning philosophers using .NET (TPL, sync structures, other) (2019). https://habr.com/ru/post/447898/ • .NET Core (open source) (2017-2018). Accelerated regular expressions 5.5 times (40K calls with 1.6K unique) for a cloud environment by engineering a multithreaded LRU cache using C#. Consolidated 4 modules (System, System.Environment and others) by refactoring ~350 LoC in C#. | |

AWARDS

- The Effective Altruism Introductory Program, April 2022
- Fluent in English: C1 (Advanced) CEFR, July 2022: <https://certs.duolingo.com/6a984c2c709f518792e1d3e9a9be36a0>
- Toastmasters International - Completed 15 projects (public speeches, leadership roles), 2017-19. Member Number: 6730340.
- Awarded Generalist at StackOverflow (id 511144) among 1K users out of 1.6M active.
- Microsoft Certified Solutions Developer (MCSD): Web Application, Jan 2016. MCP/MTA: Software Development Fundamentals, Nov 2013.