ILLYA STARIKOV

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San Francisco Bay Area

ill·ya star·y·kov | He/Him |

$\int_{2017} expertise\,(\text{Data Science, Cloud, System Design})\,dt = 7^{+}$ YoE

Software Engineer applying AI & ML to build the future of ~~digital~~ communication. *Pursuing opportunities to put a dent in the universe.*

VOCATION

9/2023 **Software Engineer** *Research,* *Labs*
Google Project Starline *San Francisco Bay Area*

- Designed the end-to-end factory software architecture, **adopted by Google and HP**
  - Aligned **25** cross-functional engineering managers, ICs, security council, and program management
- Brought up in-house upload server infrastructure, facilitating factory data access for Google and HP
- Implemented the standard factory interface for Starline's OS, responsible for interfacing, testing, and calibrating
  - Integrated six subsystems into said interface, including one audio functional test
  - Formulated Diagnostics framework, responsible for system health checking as a factory final-assembly test
- Contributed to the release process, automating ($>$ **25**) factory preflight tests into a single Bash script

9/2023 **Software Engineer** *Platforms & Devices Product Area (PDPA)*
12/2019 **Google** Central Test Engineering *San Francisco Bay Area*

- Factory audio software DRI for **Nest Cam, Pixel Tablet, Pixel Buds Pro, Pixel Buds Pro 2**
  - **Saved $120k in program capex** by optimizing Nest Cam (**52**%) and Pixel Tablet (**23**%) test time
  - Nest Cam's test script was **fastest within Google audio** (by **36**%) during entire tenure
  - Nest Cam was Nest's first fully-remote program, from PROTO to MP
- Architected an ML system to make Nest and Pixel factory data more insightful and actionable
  - Pioneered **6** novel ML use-cases, across **7** programs, with accuracy up to **98.5**%
  - Example pipelines include clustering common failures from previous products, classifying said failures in future products, and using regression to produce new metrics or replace old ones
- Hosted intern who built a data fusion of {"3D" Lidar + "2D" photos}, implementing feature matching via ML SuperGlue Network and OpenCV ORB, producing color depth-maps and interactive 3D reconstructions
- Founded or co-founded efforts to scale software within entire organization: documentation overhaul (internal **350 new users/month, 750 new sessions/month**), boost software testing (**hundreds of new test cases**), test station adoption org-common or team-common libraries (**code reduction up to 70**%)
- Implemented initial factory data downloader (adopted by org, external teams), common audio test framework (entire team), and lead forums for knowledge sharing (team participation)

Garmin, **2½** *y*

12/2019 **Software Engineer** *Aviation*
7/2018 **Garmin** Safety & Datalink *Greater Kansas City Area*

- **Lead system testing effort** to meet DO-178B compliance on **GDL-60**
  - Designed new test architecture, supported test infrastructure, and wrote test plans
- Implemented embedded software to synchronize configuration between two operating systems
- Lead a high-school focused engineering project to build and race a hovercraft, presented at Kansas State's ACM, guided children with Bring Your Child To Work Day projects, hosted tours

7/2018 **Software Engineering Intern** *Aviation*
8/2017 **Garmin** Interfaces/Data Routing *Rolla, MO*

- Implemented validation system for a highly-utilized aviation tool, resulting in **25**% **code reduction** in affected classes

8/2017 **Software Engineering Intern** *Automotive OEM*
5/2017 **Garmin** *Greater Los Angeles Area*

- Enhanced reliability (**80**% **to 100**% **success rate**) and execution time (**5**× **speed up**) of automation suite by developing on-device APIs and consuming new, optimized APIs in test suite

12/2017 | **Team Lead & DRI** *Aerospace*
4/2016 | **Missouri S&T Satellite Team** Stereoscopic Imaging *Rolla, MO*

- **Lead 6 person team** of undergraduate and graduate students to deliver nanosatellite payload: mid-flight, stereoscopic capture (via MR SAT) and 3D reconstruction of a paired satellite (MRS SAT)
- Wrote synchronous flight capture code across $2\times$ cameras to run on-device (Rasperry Pi)
- Collaborated with chief engineer, program manager, and program subsystems to architect flight code
- Satellite is undergoing testing and reviews, scheduled for launch on `Summer 2024`

5/2017 | **Undergraduate Teaching Assistant** *Computer Science*
8/2016 | **Missouri University of Science and Technology** *Rolla, MO*

- Taught programming concepts to freshman/sophomore-level students across $3\times$ classes: Introduction To Programming (Class+Lab), Data Structures (Lab)
- Created assignments, graded assignments, tests for **class sizes upto 60 students**
- Automated grading with tools to detect plagrism, styleguide conformance, and course-specific rules

12/2014 | **Assistant** *Employment Services*
9/2014 | **Jefferson College** *Hillsboro, MO*
Rehired 5/2015–8/2015, 5/2016–8/2016

- Created user manual to serve as a guide for all new employment services assistants
- Maintained large student-employment databases via college's content management system
- Designed posters, fliers, and newsletters for campus announcements

8/2014 | **Web Developer**
5/2014 | **Freelance** *De Soto, MO*

- Supported **6** projects for various clients: creating websites, mockups, data mining, data entry
- Specialized in Wordpress and Bootstrap frameworks, crafting sites to meet client's requirements

Software Engineer Project Starline **Google** 9/2023–`present`
Software Engineer Central Test Engineering **Google** 12/2019–9/2023
Software Engineer Safety & Datalink **Garmin** 8/2017–6/2018
Software Engineering Intern Interfaces/Data Routing **Garmin** 8/2017–6/2018
Software Engineering Intern Automotive OEM **Garmin** 5/2017–8/2017
Bachelor of Science Computer Science **Missouri S&T** 1/2015–12/2018
Team Lead & DRI **Missouri S&T Satellite Team** 4/2016–12/2017
Undergraduate Teaching Assistant Computer Science **Missouri S&T** 8/2016–4/2017
Computer Lab Assistant **Missouri S&T** 1/2016–4/2017
Employment Services Assistant **Jefferson College** 9/2014–12/2014, 5/2015–8/2015, 5/2016–8/2016
Web Developer **Freelance** 5/2014–8/2014
Computer Lab Assistant **Missouri Valley College** 9/2013–5/2014

ATTRIBUTES

`tech` | **Languages** Python, C++, C, Bash, SQL, LaTeX
Previous Swift, C#, Lua, Perl, Assembly, Lisp, Matlab, Vimscript, Basic, AppleScript, ActionScript
ML scikit-learn, TensorFlow, Colab, Google Cloud Platform (GCP)
Tools Docker, Git, i3wm, Make, regex, tmux, Tmuxinator, Vim, Xcode & iOS toolchain, ZSH
Markup CSS, HTML, JSON, Markdown, reStructuredText, XML, YaML
Python Cython, matplotlib, numpy, pandas, pdb, pyenv, SciPy, sphinx, tox, venv
C++17 abseil, Boost, catch2, lldb, STL, valgrind

`stats` | **7** consumer projects, $\mathbf{15}^{+}$ interviews conducted, **1** intern hosted, $>$ **700** CLs submitted, $>$ **100** "tickets" closed, **8** managers reported to

`kudos` | **8**× Google Peer Bonus, **3**× Google Spot Bonus, Googler Thank You Campaign receipient, {Garmin new-hire, Google new-hire, Starline} trivia winner, $\mathbf{1}^{\text{st}}$ Place MegaMiner AI, Summa Cum Laude honors, **6**× Deans List Award, $\mathbf{18}^{\text{th}}/\mathbf{229}$ Missouri S&T ACM SIG Competition ranking

EDUCATION

12/2018 **Bachelor of Science** *Computer Science*
1/2015 **Missouri University of Science and Technology** *Rolla, MO*
GPA $\mathbf{3.83}/4.0$; Major GPA $\mathbf{3.88}/4.0$; **Summa Cum Laude**
Advisers Dr. Jennifer Leopold, Dr. A. Ricardo Morales, Dr. Simone Silvestri, Professor Clayton Price
Associations Academy of Computing Machinary (**ACM**) [2/2016–5/2018], Missouri S&T Satellite Team (**MSAT**) [12/2017–5/2018], Institute of Electrical and Electronics Engineers (**IEEE**), [1/2016–5/2017]
Coursework Artificial Intelligence, Evolutionary Computing, Data Mining, Object-Oriented Numerical Modeling, Analysis of Algorithms, Undergraduate Research, Differential Equations, Calculus, Linear Algebra, Statistics, Modern Physics, Physics, Discrete Mathematics, Web Design, Micro Embedded Design, Chemistry

Private Pilot Ground School 3/2019–5/2019
Jefferson College 8/2014–12/2014 *A+ scholarship*
Missouri Valley College 8/2013–5/2014 *Cross-Country/Track & Field scholarship*

5/2013 High School *diploma*
8/2009 **De Soto Senior High** *De Soto, MO*
Associations Cross-Country (Class $\mathbf{3}$, $\mathbf{2}\times$ All-District individual [2011–2012], $\mathbf{1}\times$ All-District team [2012], $\#\mathbf{5}$ team state ranking [2012]), Track & Field, Future Business Leaders of America (FBLA)

5/2009 Elementary, Middle School *diploma*
8/2000 **Sunrise R-IX School District** *De Soto, MO*
Associations Cross-Country, Basketball, Computer Club, Quiz Bowl, Chess Club, Yearbook Design
Awards Presidential Fitness Award [x8, 2001–2009], School Speech Contest Winner