

ILLYA STARIKOV



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San Francisco Bay Area

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Software Engineer, Google, 8 years. Shipped **10M+** Pixel, Nest, and Beam devices. Built ML systems across **7** product lines: anomaly detection via clustering, failure classification (**98.5%** accuracy), quality regression (± 0.5 dB). Production-hardened, research-ready.

EXPERIENCE

Software Engineer

Research, Labs

Google Beam

San Francisco Bay Area

Camera Team

- Owned camera hardware-in-the-loop test (HILT) infrastructure, enabling new tests, hardware, and platforms
 - Eliminated **105-day** camera HILT failure streak within **1** month of start-date, resolved **10+** blocking issues
 - Collaborated with team to improve pass rate from **30%** to **100%**, grow suite from **10** to **30+** tests
- Re-architected camera software updater for multi-peripheral support, integrating new hardware configurations
- Drove cross-platform integration spanning device state management, client services, networking, and OS layers
- Reduced system image by **30%** (**700 MB**), implemented CI/CD presubmit checks, and built developer tooling
- Earned code approval from Google Fellow **Sanjay Ghemawat** for fixing company-wide documentation

Platform Team

- Designed factory software architecture **adopted by Google-HP partnership** for Beam manufacturing
 - Aligned **25** cross-functional stakeholders spanning engineering, security, and program management
- Built secure data pipeline between Google and HP factories, enabling real-time production monitoring
- Unified factory interface through comprehensive testing, calibration and diagnostics framework
 - Integrated **6** mission-critical subsystems: audio, camera, displays, lighting, OS, USB
- Automated **25+** manual preflight tests, saving **2+** days of engineer time in 2024 alone

C++, Python, Bash

Software Engineer

Platforms & Devices Product Area

Google Central Test Engineering

San Francisco Bay Area

- Shipped **10M+ Nest Cam, Pixel Tablet, Pixel Buds Pro/2** devices as factory audio software DRI
 - Saved **\$120k** in capex via test code optimizations: Nest Cam (**52%** time reduced), Pixel Tablet (**23%**)
 - Achieved **36%** faster performance than any other Google audio test suite with Nest Cam
 - Pioneered Nest's first fully-remote hardware program from prototype to mass production during COVID-19
- Shipped **6** ML analytics models for automated fault detection across **7** Nest/Pixel products
 - Applied clustering to surface **10+** previously unknown defect patterns, generating labeled datasets
 - Built classification models achieving **98.5%** accuracy, automating defect detection
 - Developed regression models predicting quality metrics within ± 0.5 dB, replacing manual measurement
- Mentored 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
- Spearheaded organization-wide scaling initiatives: documentation overhaul (**350** users/month, **750** sessions/month), expanded test coverage (hundreds of new test cases), standardized libraries achieving **70%** code reduction
- Created foundational tools adopted organization-wide: factory data downloader, unified audio test framework, knowledge-sharing platforms



















- Contributed **1.3M** lines of code across **16** languages to production systems

Python matplotlib, numpy, pandas, SciPy, Git

Garmin, 2y 6m 11d

Σ

12/2019	Software Engineer Garmin Safety & Datalink	Aviation Kansas City Area
	<ul style="list-style-type: none"> ◦ Led system testing achieving DO-178B aviation safety compliance for GDL-60 datalink receiver <ul style="list-style-type: none"> ◦ Designed test architecture, built infrastructure, and authored comprehensive test plans ◦ Developed embedded software enabling configuration sync across dual OS environments (Garmin, Linux) ◦ Led STEM outreach: hovercraft engineering project (presented at Kansas State ACM), mentored Bring Your Child To Work Day, conducted facility tours 	
7/2018	 Git	
7/2018	Software Engineering Intern Garmin Interfaces/Data Routing	Aviation Rolla, MO
	<ul style="list-style-type: none"> ◦ Built validation system for aviation tool achieving 25% code reduction while enhancing reliability 	
8/2017	◦ Delivered 10+ quality-of-life enhancements for aforementioned aviation tool	
8/2017	Software Engineering Intern Garmin	Automotive OEM Los Angeles
	<ul style="list-style-type: none"> ◦ Improved automation suite reliability from 80% to 100% and achieved 5x speed improvement through API optimization 	
5/2017	 Visual Studio	
12/2017	Team Lead, DRI Missouri S&T Satellite Team Stereoscopic Imaging	Aerospace Rolla, MO
	<ul style="list-style-type: none"> ◦ Led 6-person interdisciplinary team developing nanosatellite payload with real-time stereoscopic imaging and 3D reconstruction for satellite monitoring ◦ Architected synchronized dual-camera system on Raspberry Pi for precise, space-based stereoscopic imaging ◦ Collaborated with chief engineer to design flight software meeting aerospace standards 	
4/2016	◦ Achieved critical design review approval; satellite launch scheduled for 2026	
5/2017	Research & Teaching Assistant Missouri University of Science and Technology	Computer Science Rolla, MO
	<ul style="list-style-type: none"> ◦ Built discriminative subgraph algorithm comparing execution traces from correct vs. faulty runs to automatically pinpoint buggy code ◦ Taught programming fundamentals to hundreds of students across 4x classes and labs instances of Introduction to Programming and Data Structures ◦ Successfully detected plagiarism, style infractions, and bugs via self-developed automation using Stanford's MOSS 	
8/2016		
12/2014	Assistant Jefferson College	Employment Services Hillsboro, MO
	Rehired 5/2015–8/2015, 5/2016–8/2016	
	<ul style="list-style-type: none"> ◦ Created user manual adopted as standard training resource for all new assistants 	
9/2014	◦ Managed campus-wide student employment database and designed marketing materials	
8/2014	Web Developer Freelance	De Soto, MO
	<ul style="list-style-type: none"> ◦ Delivered 6 client projects including websites, UI/UX design, and data analytics 	
5/2014	◦ Specialized in WordPress and Bootstrap for responsive web development	
5/2014	Assistant Missouri Valley College	Computer Lab Marshall, MO
	<ul style="list-style-type: none"> ◦ Provided technical support to students with Visual Basic, C, and C++ programming assignments and projects ◦ Coached students in a diverse array of computer applications (Microsoft Suite, Visual Studio, etc.) and programming concepts, debugging techniques, and best practices for software development ◦ Maintained and updated software installations across lab workstations, ensuring compatibility with coursework 	
9/2013		





11/2012		Hospitality Staff Villa Antonio Winery <i>Hillsboro, Missouri</i>
		<ul style="list-style-type: none"> Assisted with dining operations: hauled dishes, cleaned facilities, and maintained service standards Directed event parking and assisted with event setup for weddings and special occasions
6/2010		<ul style="list-style-type: none"> Harvested grapes from vineyard and transported to production facility during summer seasons
		Software Engineer Google Beam 1/2025–present
		Software Engineer Google Beam 9/2023– 1/2025
		Software Engineer Google Central Test Engineering 12/2019– 9/2023
		Software Engineer Garmin Safety & Datalink..... 7/2018–12/2019
		Software Engineering Intern Garmin Interfaces/Data Routing..... 8/2017– 6/2018
		Software Engineering Intern Garmin Automotive OEM..... 5/2017– 8/2017
		Bachelor of Science Missouri S&T Computer Science 1/2015–12/2018
		Team Lead, DRI Missouri S&T Satellite Team 4/2016–12/2017
		Research & Teaching Assistant Missouri S&T Computer Science 8/2016– 4/2017
		Assistant Missouri S&T Computer Lab..... 1/2016– 4/2017
		Assistant Jefferson College Employment Services... 9/2014–12/2014, 5/2015–8/2015, 5/2016– 8/2016
		Web Developer Freelance 5/2014– 8/2014
		Assistant Missouri Valley College Computer Lab 9/2013– 5/2014
		Hospitality Staff Villa Antonio Winery 6/2010–11/2012
		artificial AI algorithms: evolutionary SAT solver, chess engine with minimax/alpha-beta, A* puzzle solver.
		starikov.co Independent technical writing on AI, computer science, and mathematics. 70+ posts, 14k views/year.
		.dotfiles Multi-platform, enterprise-grade development environment with 80+ plugins, and 10+ shell tools.

EXPERTISE

tech	Languages Python, C++, C, Bash, SQL Additional LaTeX, Swift, C#, Lua, Perl, Assembly, Lisp, Matlab, Vimscrip, Basic, AppleScript, ActionScript ML/AI scikit-learn, TensorFlow, Colab, GCP Vertex AI Tools Docker, Git, Make, regex, tmux, Vim, Xcode, CI/CD, Linux 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
impact	8 consumer/enterprise products launched, 25+ interviews conducted, 1 intern mentored, 800+ CLs submitted, 300+ code reviews, 100+ bugs fixed, 9 managers reported to
awards	8x Google Peer Bonus, 5x Google Spot Bonus, Google “Thank You” campaign recipient, {Garmin new-hire, Google Noogler orientation, Google Beam semi-annual summit} trivia champion, Summa Cum Laude, 1st Place MegaMiner AI, 6x Dean’s List, 18th/229 Missouri S&T ACM Competitor

EDUCATION

12/2018	Bachelor of Science Computer Science
1/2015	Missouri University of Science and Technology <i>Rolla, MO</i>
	GPA 3.83/4.0 ; Major GPA 3.88/4.0 <i>Summa Cum Laude</i>
	Advisers Dr. Jennifer Leopold, Dr. A. Ricardo Morales, Dr. Simone Silvestri, Professor Clayton Price
	Associations
	<ul style="list-style-type: none"> ACM Academy of Computing Machinery..... 2/2016–5/2018 MSAT Missouri S&T Satellite Team..... 12/2017–5/2018 IEEE Institute of Electrical and Electronics Engineers..... 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 <i>A+ scholarship</i>	
	Missouri Valley College 8/2013–5/2014 <i>Track & Field scholarship</i>	
5/2013	High School	<i>Diploma</i>
8/2009	De Soto Senior High	<i>De Soto, MO</i>
	Associations Cross-Country (Class 3 , 2x All-District individual [2011–2012], 1x All-District team [2012], #5 team state ranking [2012]), Track & Field, Future Business Leaders of America (FBLA)	
5/2009	Elementary, Middle School	<i>Diploma</i>
8/2000	Sunrise R-IX School District	<i>De Soto, MO</i>
	Associations Cross-Country, Basketball, Computer Club, Quiz Bowl, Chess Club, Yearbook Design	
	Awards Presidential Fitness Award [x8, 2001–2009], School Speech Contest Winner	